

## **AN EXPLORATORY STUDY OF MALAYSIAN ONLINE NEWSPAPERS' REPRESENTATION OF RISKS FROM LYNAS RARE EARTH PROJECT**

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### **ABSTRACT**

We propose a hybrid of the Social Amplification of Risk Framework and the Social Semiotic Theory of Multimodality to explore how discourses on risks from Lynas rare earth project in Malaysia are represented by Malaysian online newspapers. Evidence suggests that re-contextualizing voices in environmental reporting and framing reflect changes in relationship between stakeholders in Malaysia. There is also evidence of neglect of the plights of affected people and communities in environmental reporting in Malaysia's mainstream print media. However, there is a dearth of evidence on how discourses by social actors on risks, especially on emerging technologies like rare earth in Malaysia are represented in Malaysian online newspapers. Yet the Malaysian online audience are active and enormous. In addition, Lynas' rare earth project in Malaysia generated controversial discourses on the Internet, but not much is known about how these discourses were represented. Meanwhile, the Lynas plant in Kuantan got a two-year full operating license in 2014, already gulped over three billion Malaysian Ringgit, and stirred protests and heated debates at the highest levels amid allegations of inadequate long term plans for disposing radioactive toxic wastes which can have diverse risks. Supposedly, the fears draw from previous experiences from the Asian Rare Earth plant in Bukit Merah, Perak, which left radioactive wastes that caused workers and residents to suffer from leukemia, congenital diseases, lead poisoning and deaths. Statistically, the Kuantan plant produced 1,089 tonnes of rare earth oxides in the first quarter of 2014 and targets 11,000 tonnes yearly. This is 10 percent of global production in 2012. Therefore, this study proposes to explore types of risks represented, how the risks are defined and the relationship between the risks (if any). It also seeks to explore social actors who define, amplify or attenuate these risks; identify the modes used to convey meanings of the risks; and how the modes convey meanings of specific risks as represented in mainstream and alternative Malaysian online English language newspapers.

**Keywords:** Lynas, Malaysia, rare earth elements, risk representations

## INTRODUCTION

Risks have multiple dimensions (Dunwoody & Peters, 1992) that include things, forces or circumstances that pose danger to people, their health, ecosystem, personal property, quality of life or economic activity (Flynn & Slovic, 1999). Risk is also the cause or probability of unwanted events, or the statistical expectation value of harm from unwanted events (Rosa et al. in Möller, 2012). Risk is connected to lack of knowledge and knowledge about risk is knowledge about the unknown (Hansson, 2012). Risk is also embroiled in reflexive modernization (Beck, 1992), characterized by awareness of the problematic consequences of modernity, uncertainty and how to deal with it (Macdonald, 2007). Thus, if all events are rooted in discourse and an event only counts as a discursive event if it appears on the discourse planes of politics and the media intensively, extensively and for a prolonged period of time (Jäger & Maier, 2009), then discourses from Lynas' rare earth project in Malaysia in online newspapers can be used to represent or construct perceptions of risks from the event.

Therefore, following reports in 2011 that the Atomic Energy Licensing Board (AELB) of Malaysia has since 2008 permitted Lynas Corporation, an Australian company to construct the Lynas Advanced Materials Plant (LAMP) to operate the world's largest rare earth plant at Kuantan, Malaysia, there were fears, protests and campaigns to stop the plant. The fears arose from fears of risks from huge toxic-related wastes amid allegations that Lynas has no safe disposal plan for radioactive wastes. Despite protests and campaigns to halt its operations, Lynas got a two-year temporary operating license in 2012 and a two-year full operating license in 2014.

The fears and anxieties may be linked with tragic experiences from rare earth processing in Malaysia at the Asian Rare Earth Sdn. Bhd. plant at Bukit Merah, Perak, Malaysia in 1985 where workers suffered sharp rise in leukemia, congenital diseases, lead poisoning and deaths (Nik, 2012). Yet, as an emerging technology, rare earth elements contain vital chemical elements found in the earth's crust, which are essential in manufacturing high-tech products like hybrid cars, electronics, camera lenses, computers, communications and health care equipment, weapons, among others. Still, Tong (2014) warns that the environment and people are exposed to risks in society where technological innovations are rampant.

These controversies generated divisive debates to highlight threats and prospects and torrents of the debates appeared on the Internet. Meanwhile, the Malaysian Communications and Multimedia Commission (MCMC's) Internet users' survey reveal there are at least 18.6million Internet users in Malaysia (MCMC, 2013). It is also estimated that there were 12.2million Internet users in Malaysia in 2014 (<http://www.internetlivestats.com/internet-users-by-country/>). Furthermore, risk is already a defining concept in public debate of emerging technologies [like rare earth] and the mass media plays a key role in the social transformation (Eldridge & Reilly, 2003) of often polarized debates (Nelson, Krogman, Johnston, & St. Clair, 2014). Yet, there is lack of detailed analysis of the role of the media, for example online newspapers, in the representation of risks and/or opportunities from discourses on Lynas' rare earth project in Malaysia. Therefore, the proposed study seeks to exploit these shortcomings to situate the role of online newspapers in the social amplification and/or attenuation of risks to understand mass media representation of rare earth, considering its potential economic opportunities and implications to various aspects of human life.

This is a proposition to partially fulfil requirement of a research for the award of a Doctor of Philosophy (PhD) Degree in Journalism that seeks to specifically explore types of risks represented, how they are defined and the relationship (if any) between the risks. It also seeks to explore the social actors who define, amplify or attenuate these risks; identify the modes used to convey meanings of the risks; and how the modes convey meanings of the specific risks. Three mainstream (*The Star*, *New Straits Times*, *The Edge*) and three alternative (*Malaysiakini*, *Malaysia Insider*, *Free Malaysia Today*) are proposed. A hybrid of the Social Amplification of Risk Framework (SARF) and the Social Semiotic Theory of Multimodality (SSTM) are also proposed. The socio-cognitive perspective of Critical Discourse Analysis (CDA), as a textual analytical approach, is also contemplated, all to understand how social actors negotiate with and influence socio-cognitive processes, behaviours and responses on Lynas' rare earth project in Malaysia.

## LITERATURE REVIEW

### Print, Online and Alternative Media Contexts in Malaysia

Malaysia's mass media landscape partly resulted from the May 1969 ethnic riots after the ruling coalition lost its two-third majority in the Lower House of Parliament for the first time. Socio-economic imbalances between ethnic groups, particularly between Malays and non-Malays was a major reason for the ethnic suspicions and hostilities. Hence, the New Economic Policy (NEP) of 1971 was formulated (Zaharom & Wang, 2004) to increase participation of all Malaysians in the nation's economy. This led dominant political partners in the ruling coalition's Barisan Nasional (BN), like the United Malays National Organization (UMNO), which is the dominant partner to take control of major newspapers like the *Straits Times* (*ST*). The *ST*, originally owned by Singaporean investors, became the New Straits Times Press (NSTP) and took control of major mainstream newspapers under the NSTP stable (Loh & Mustafa; Means in Zaharom & Wang, 2004). Other BN component parties like the Malaysian Chinese Association (MCA) acquired majority stakes in the Star Publications, publishers of Malaysia's top selling English daily, *The Star*. Subsequently, the MCA acquired other Chinese language newspapers like the *Nanyang Siang Pau* and *China Press* between 2001/2002 (Zaharom, 2002; Zaharom & Wang, 2004). Government also amended the Imported Publication Act (1958) in 1972 to ban or censor imported publications that are prejudicial to national interest or security (Means in Zaharom & Wang, 2004). Further, government introduced the Official Secrets Act (OSA) of 1972 to prohibit access to information that is classified as official secret by government and, can be used by enemies of the country. The OSA has been amended and is still effective (Zaharom & Wang, 2004).

The media in Malaysian was also shaped by policies during the premiership of Dr. Mahathir Mohamad from 1981 to 2003 (Lee, Means in Zaharom & Wang, 2004). Permits of mainstream national newspapers were suspended while those who were allowed to publish were strictly censored. There were also major political crackdowns, especially in 1987, where over 100 opposition politicians, social activists, academics, religious and human rights activists and social workers were detained under the Internal Security Act (ISA)<sup>1</sup> (Zaharom & Wang, 2004). The

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<sup>1</sup> The ISA was repealed in 2012 and replaced with the Prevention of Crime and Prevention of Terrorism Acts

gagging of the media continued even under Abdullah Ahmad Badawi who succeeded Dr. Mahathir (Zaharom, 2008).

On the other hand, alternative news and information sources emerged from widespread disenchantment with mainstream media (Zaharom, 2002) while Internet-based alternative media emerged from restrictions by the Printing Presses and Publications Act (PPPA<sup>2</sup>) of 1984 (Ling, 2003). Shift towards alternative media is mostly associated with media control and censorship during Dr. Mahathir's stewardship when mainstream media was accused of impunity in supporting government and being uncritical of events prior to, and in the aftermath of the political saga of former Deputy Prime Minister and political opposition leader, Anwar Ibrahim (Ling, 2003; Zaharom, 2002; Zaharom & Wang, 2004). The Internet allowed dissenters to voice support for Anwar, spread criticisms against government, and provided channels of alternative information on other injustices (Ling, 2003).

Subsequently, gains by opposition parties in the 1999 general elections, such as the Pan-Malaysian Islamic Party (PAS) resulted in clampdown on dissent, especially on opposition media including PAS' *Harakah* (Zaharom, 2002, 2008; Zaharom & Wang, 2004). The restrictions shifted attention to the Internet and birthed Malaysia's first independent web-based daily newspaper, *Malaysiakini*, launched before the 1999 general elections (Zaharom, 2002, 2008; Zaharom & Wang, 2004). *Malaysiakini* was initially largely funded by the Southeast Asian Press Alliance (SEAPA). Alternative presses in Malaysia are published by Non-Governmental Organizations (NGOs), activists, and opposition political parties. At the onset, their websites share similar features and urged readers to print and distribute their pages to show that at the time, Internet access in Malaysia was not widespread (Ling, 2003). Free publication by *Malaysiakini* was obstructed by cash crunch and in 2001, it started a subscription service to increase its revenue base. *Malaysiakini* suffered financially and politically due to hard stance on the ruling coalition, was denied press accreditation, its premises raided and continues to be harassed and denied coverage of some government meetings (Zaharom & Wang, 2004).

Nonetheless, quality and credibility of news from the over 50 initial alternative news websites were questionable just like mainstream media's because they were mainly run by amateurs with little or no journalism training. They thrived on rumours and innuendoes and the few which survived did so due to the resilience of their web masters (Zaharom, 2002). The Anwar saga became a watershed for alternative press in Malaysia because of the alternative nature of their content compared with the sycophantic mainstream media's. Today, online alternative media in Malaysia have potentials and limitations. They provide vital critical and dissenting coverage, are gateways to access a wide range of viewpoints, but are repressed by various laws, while their small audiences and lack of resources limit their influence on society. This further polarizes support and opposition to government because government controls the mainstream media (Ling, 2003). Thus, the present ownership structure and regulation of the media in Malaysia is a tool for control since government is consistently the highest single source of advertising expenditure and vast majority of taxpayer funds for advertising also go to government-owned media (WAN-IFRA, 2014). More so, most alternative media are restricted from participating in the print media

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<sup>2</sup> The PPPA of 1984 replaced other existing statutes: the Printing Presses Act 1948 and the Control of Imported Publications Act 1958 (Revised 1972). The PPPA regulates publishing and printing presses in Malaysia. All printers and publishers require printing licenses from the Malaysian Ministry of Home Affairs and violators are meted with stiff penalties.

sector to deny access to advertising revenues, which are located in non-digital media markets (WAN-IFRA, 2014).

### **Risks in Media Representation**

Risks vary and derive from lack of knowledge on a risk or risk event wherefrom the risk(s) emanates. Risk perceptions may therefore, result from uncertainty and uncertainty may likely generate anxiety. Thus, to overcome uncertainty, increase in information is required and this ultimately results in uncertainty reduction. Supposedly, industrialization and technology can cause risks related with pollution, health, ecology, food and food security, climate, extinction of species, etc. These according to Tong (2014), pose a risk not only to the environment and human health but also to the society as a whole.

There is a dearth of studies on representation of risks in the mass media, especially in Malaysia, and on emerging technologies such as rare earths. Meanwhile, since risk affects several aspects of human life, researchers (Azman, Mahyuddin, Mustafa, & Wang, 2012; Hamidah, Adnan, Kamaliah, & Haroon, 2012; Mustafa, 2012) found that Malaysia's mainstream print media neglects the plight and concern of affected people and communities in reporting, for example, the environment. Prasad, Muhammad, Mohd, and Sritharan (2012) also found that representations in the media lacked scientific explanation especially when reporting environmental disasters.

In other climes, media representations of risks differ to include: economic, environmental, health, medical, scientific, and technological risks. The goals of discourses on different risks are uncertain, but media representations and conceptualization on environmental risks, for example, are contextual. Evans, Mindy Thompson, Green, and Levison (2002) related environmental risks to lead poisoning, household pests, pesticides, environmental tobacco smoke and harmful drugs. Amberg and Hall (2008) related risk to source or type of real, potential or implied health problem. Jönsson (2011) related it to threat to aquatic habitat like depletion of oxygen in water due to discharge of phosphor and nitrogen, overfishing and threat to aquatic organisms, chemical pollution and maritime transportations. Mustafa (2012) related it to degradation of the environment and depletion of (non)renewable natural resources, threats to ecological balance due to human neglect or exploration of the physical environment and threats from competition over scarce resources, thereby relating environmental risks to economy and health. Meanwhile Martin (1996) defines technological risk as danger to the public from technological systems, due to breakdowns or normal operations. Metag and Marcinkowski (2014) studied representation of technological risks from nanotechnology and found that technology can produce medical, scientific and economic risks.

Risks studies have investigated environmental risk representation in newspapers (Amberg & Hall, 2008; Hove, Paek, Yun, & Jwa, 2014; Jönsson, 2011). Others examined technological risk representation in newspapers (Metag & Marcinkowski, 2014; Rooke & Amos, 2014). One studied newspapers/radio and TV programme transcripts representations of technological issue (Romanach, Carr-Cornish, & Muriuki, 2015). Others studied environmental issue representation in newspapers (Ashlin & Ladle, 2007; Tong, 2014) and audience perception studies on environmental risks (Evans et al., 2002; Mase, Cho, & Prokopy, 2015).

Hove et al. (2014) applied Framing and Uncertainty Reduction theories to explain environmental representation of cancer-related risks in South Korea with the assumption that characteristics of news coverage about a risk affects the way people perceive and react to the risk at hand; while the way uncertainty is presented affects the level of uncertainty that people feel and their response to the risk. The study found audience were mostly re-assured of lesser risk from cancer-related environmental risks. Jönsson (2011) theorized with a fusion of Public Sphere, Mediatization, Agenda-Setting, and Framing assumptions to examine public discourse and knowledge of (un)certainly and the main actors in assignment of salience and definition of problem, causes and solutions to environmental risks in the Baltic Sea by the Swedish newspaper, *Dagens Nyheter*. The Baltic Sea was represented as a theatre of political and economic crisis. Most articles acknowledge different risks, but depletion of oxygen in water was most salient as the greatest threat. Amberg and Hall (2008) used the Agenda Setting Theory to establish the role of the media in representing aquaculture from farmed salmon in the U.S. to investigate how media direct public policy debates by focusing more on negative information (e.g., health risks) than on positive information (e.g., health benefits). They found that U.S. newspapers emphasize on risks in 82 percent of their coverage to convey a distinct message of severe health consequences from consuming farmed salmon.

Romanach et al. (2015) investigated benefits and risks from geothermal energy in Australia to reveal representation from economic or scientific perspectives. Reporting of benefits and risks varied: some were more balanced and reported both benefits and risks while others, about the Australian Government Clean Energy Plan focused on the technology's benefits, which were closely related to the climate change discourse and the scientific notion that moving to a low-carbon society is essential to reduce green-house gas emissions. Rooke and Amos (2014) used the Diffusion of Innovations Theory to demonstrate that mass media are important in making people aware of, and shaping their perceptions of, innovations from British and Scottish newspapers' representation of meanings, uses and users of e-cigarettes. British and Scottish newspapers represented technological risks positively like Austrian, German and Swiss newspapers' representation of emerging technology. Five themes emerged: smoke free legislation, risk and uncertainty, healthier choice, celebrity use and price. The first urged users to smoke in places covered by the smoke free legislation. The second suggested that e-cigarettes may be harmful, were not adequately tested or regulated. The third revealed e-cigarettes were healthier alternatives to smoking tobacco cigarettes, do not contain harmful substances found in tobacco cigarettes, are less harmful than tobacco products or can help to stop smoking. The fourth promoted e-cigarette through celebrity endorsement while the fifth suggested that e-cigarettes were expensive but could help save money compared to tobacco cigarette. The dominance of more positive representations and communication of key characteristics of e-cigarette suggests that British and Scottish news media did not only parallel increased interest in, and use of e-cigarette, but may have contributed to it.

It is significant to note that a comparison of representations of risk by pro-government and opposition newspapers in Malaysia has not yet been uncovered. However, literature reviewed in other countries like China, for example, did not show significant differences in interpretations of risk among newspapers, for example on the environment, in the studies on Chinese's *People's Daily* [which is pro-government] and several commercial newspapers. The *People's Daily* is the official newspaper of the ruling Chinese Communist Party and despite proliferation of

commercial press and the conglomeration of media organizations, the Chinese government strongly censors and regulates the mass media (See for example, Xie, 2015; E. Zhang & Fleming, 2005; Zhao, 2000).

### **Social Actors in Representations of Risks in the Media**

Social actors are conceptualized in the proposed study as diverse communities, social groups and organizations, experts, industry, lay people, government and their agencies, and so on, who provide information used to amplify and/or attenuate various risks from Lynas rare earth project as a risk event in Malaysia among online Malaysian newspapers.

Studies on representation of risks and risk-related issues (e.g.: Hove et al., 2014; Jönsson, 2011; Metag & Marcinkowski, 2014; Romanach et al., 2015; Tong, 2014) have used information and responses to counter information from diverse social actors; and to provide conflicting views. Some actors have however been more salient. For example, in Hove et al. (2014), government, industry experts, activists and lay people were the social actors in representation of environmental risks on cancer in South Korean newspapers. Government, industry and expert sources promoted emotion while activists and lay persons highlighted risks. In Jönsson (2011), authorities [public officials], scientific experts, organizations, and politicians dominated discourses on newspaper representation of environmental issues in Sweden. Voices of ordinary people were more or less invisible and different risks were intertwined in complex ways in terms of causes and effects. In Metag and Marcinkowski (2014), scientific and economic actors, and journalists make up more than 80 percent of all social actors in the representation of nanotechnology in Austria, Switzerland and Germany. In Romanach et al. (2015) who investigated representations of geothermal energy in Australia, dominant social actors were those responsible for developing the technology like industry experts, government and scientists. Government, industry and experts promoted emotion while activists and lay persons highlighted risk information. In Tong (2014), social actors in China comprised journalists and disadvantaged social groups, and their definitions and interpretation of risks were similar. They linked environmental risks to social injustice and inequalities from government's development policies.

There is therefore some evidence to suggest similarity between Asian and European mass media use of sources and the category of social actors that dominated the discourses in the representations of risks. There is also evidence to suggest differences in the representation of environmental risks in Asia and the U.S. There is also similarity between Australia and South Korea where risks are highlighted instead of benefits in representing technology and the environment respectively.

### **Relationship between Risks in Media Representations**

There are empirical observations that show environmental risks, for instance, are mostly, the causes and/or consequences of other types of risks or incidents (L. Zhang & Zhong, 2010). The literature reviewed in the proposed study also showed that forms of risks in media representation

vary and includes economic, environmental, health, medical, scientific, and technological risks. It is therefore imperative to consider arguments on existing relationships between certain risks.

Previous research on mass media representation of risks on the environment and technology showed that these risks were conceptualized differently. Environmental risks were defined in the context of the risk event and possible threat(s). Evans et al. (2002) studied knowledge of community women in the U.S. about environmental risks to health and associated environmental risks with lead poisoning, household pests, pesticides, environmental tobacco smoke and drugs harmful to health. Amberg and Hall (2008) also investigated how U.S. newsprints communicated risks and benefits from aquaculture and related environmental to human health in general and specific like source or type of real, potential, or implied health problem such as: cancer, colorants, disease transmission, fungicide, developmental defects and generally unhealthy conditions. Jönsson (2011) examined Swedish newspaper representation of environmental risks in the Baltic Sea and related environmental risk as threat to the aquatic habitat such as depletion of oxygen in water caused by the discharges of phosphor and nitrogen, overfishing and threat to other aquatic organisms, chemical pollution and maritime transportations. Consequently, findings by Jönsson (2011) can affect human health and therefore implies another relationship between environmental and health risks. Meanwhile, in a preliminary study, Mustafa (2012) investigated representation of environmental risk from Lynas' rare earth processing in mainstream Malaysian print newspapers and related environmental risks to threats that degrades the environment and depletes (non)renewable natural resources, threats to ecological balance due to human neglect and exploration of the physical environment and threats from competition over scarce resources.

It is necessary to highlight that the study by Evans et al. (2002), which discovered health risk from the environment sought to uncover the knowledge of community women on environmental risks to health. However, health risks became the immediate implication of environmental risks, because it directly affects the physical, mental and psychological conditions of the people who are resident in the vicinity of the risk event or are workers in the facility or vicinity where the risk event occurs. Nonetheless, risks related to people's health are not the only type of risks which emerge from the environment since Mustafa (2012) and Zamith, Pinto, and Villar (2013) found economic risks and Jönsson (2011) found risks to aquatic organisms too.

Thus, environmental and technological risks are related to human health. Environmental risks are also related to economic risks and depleting natural resources/exploration. Thus, representations of Lynas' rare earth project by online newspapers in Malaysia can provide contemporary empirical evidence to fill the gap on the relationship between various forms of risks that will be uncovered in this study, especially since the Academy of Sciences Malaysia and the Malaysian National Professors' Council admit that rare earth elements present environmental risks and potential economic opportunities that can be managed with improved technologies and better understanding of the implications on health and environment (ASM & NPC, 2011).

Therefore, considering that the SARF assumes that changes in risk perceptions and responses may depend on psychological, social, institutional, and cultural processes which interact with hazards to amplify or attenuate public responses to the risk or risk event (Kasperson, 2012; Kasperson et al., 1988; Pidgeon & Barnett, 2013), it can be argued that the relationship between



the various risk that would be represented can be situated if aspects of the SARF and the SSTM are integrated, wherefrom the messages and the responses and response mechanisms contain meanings which are transmitted. This is more so that the SSTM theorizes that different modes like images, colours, texts and so on can be used to convey similar, competing or complementary meanings

## **Media Representation of Risks on Emerging Technologies**

Media representation of risks from emerging technologies like nanotechnology, geothermal energy and electronic-cigarettes were positive in Australia, Austria, Britain, Germany, Scotland and Switzerland (Metag & Marcinkowski, 2014; Romanach et al., 2015; Rooke & Amos, 2014). But citizens of modern industrial societies are confronted with harsh and discomfoting lesson that benefits from technology are paid for not only with money, but with lives (Fischhoff, Slovic, Lichtenstein, Read, & Combs, 1978).

In Malaysia, Mustafa (2012) published findings of a preliminary study that is considered similar to the present proposition from analyzing 35 news reports in three mainstream print newspapers (*The Star*, *New Straits Times* and *Utusan Malaysia*) to query environmental reporting of Lynas' project between April 2011 and March 2013. Only 11.4 per cent of news highlighted grievances and concerns of protestors, as unpleasant activities. Majority were voices from ruling politicians, government officials, Lynas' leaders and experts, who predictably supported the project. Positive remarks from experts were used to endorse Lynas' project while its legal triumph was depicted as a symbolic victory for ordinary Malaysians. This suggests that processing rare earth elements in Malaysia by Lynas is in the nation's interest. Only few news mention similar protests and concerns about health hazards posed by the Asian Rare Earth factory in the early 80s in Bukit Merah, Perak, despite its tragic nature. Kaur (2015) also conducted a study on Lynas in Malaysia on social media as a digital landscape for environmental discourse on Lynas operations in Malaysia. There was no section for results or findings, but there was a discussion. This can gravely invalidate conclusions drawn from the discussions since the inferences for any discussion and of course, conclusion, will be based on findings. Nonetheless, the discussions reveal there were sustained protests, awareness campaign, blockades and opposition from local residents and Malaysian opposition politicians, and local/foreign NGOs and environmental activists. The study portray rare earth, as an emerging dangerous technology and concludes that social media cyber protests against Lynas defined public discourse and exposed how potential leak of radioactive waste poses dangerous environmental threat to Malaysia and this led government to establish an independent international expert panel to evaluate danger posed by Lynas activities in Malaysia. This can corroborate arguments by Adnan, Nik, and Azlan (2012) that environmental discourse actually represents a method and implementation, not only by providing the community with the knowledge and awareness, but also as a means of compelling policy makers to react effectively towards the environment.

## **Research Methods adopted in Studies on Media Representation of Risks**

Existing literature on mass media representation of risks show most research are conducted using quantitative approach. Few adopt mixed-method while much more less adopt qualitative research approaches. The issues and risks are mostly in online and print news media. The newspaper titles sampled in content-analytical studies reviewed so far ranged from one to 20. The newspaper titles were mostly selected using: circulation and readership figures, national outlook, geographical spread and credibility (See for example: Ashlin & Ladle, 2007; Hamidah et al., 2012; Rooke & Amos, 2014; Tong, 2014). News were mostly sourced from online news databases and physical press archives using key words or combination of key words related to

the topic. The period of study differ, but was mainly determined by occurrence of the event of interest and/or when the occurrence gained publicity within society and with media coverage.

It is pertinent to highlight that several studies on risk representations in the media do not specify or infer the data analytical approach used. It is also uncertain why studies on risk representations in mass media rarely use Critical Discourse Analysis. However, we propose to use CDA because we envision that it can be used to examine and reflect discourses that amplify or attenuate risks in online Malaysian newspapers to reinforce and negotiate meanings from information, responses and response mechanisms employed by the multiple actors who have a stake in the Lynas rare earth project in Malaysia. The relationship between representations in the media can also be inherent in the relationship between media discourse and ideology, which is a part and parcel of discourse on media representations.

### **Relationships between Discourse and Ideology**

A body of literature has established the relationship between discourse and ideology (For example in: de Beaugrande, 1999; Jost, Federico, & Napier, 2009; Purvis & Hunt, 1993; van Dijk, 1998, 2000a, 2000b, 2009a, 2009b). However, ideology as a concept has been fraught with controversies surrounding its different approaches. This, according to van Dijk (1998), is linked to its historical antecedents and debate, which is traceable to the 18<sup>th</sup> Century when Destutt de Tracy in France proposed a ‘science of ideas’ to be called *idéologie*. This science, however found its way into other disciplines like Philosophy, Psychology and Sociology in works of Karl Marx, Friedrich Engels, Marxist György Lukács, Antonio Gramsci, Louis Althusser and Emile Durkheim, among others.

Nowadays, ideology is expressed and reproduced [in and] by discourse (van Dijk, 1998, p. vii) as a shared framework of mental model possessed by groups of individuals to provide both an interpretation of the environment and a prescription on how that environment should be structured (Parsons in Jost, Federico, & Napier, 2009, p. 309). This probably explains why ideology connotes some fixed, unreasoning dogma that foments conflicts (de Beaugrande, 1999). Hence, ideologies are the fundamental beliefs of a group and its members (van Dijk, 2000a) and a system of beliefs or ideas (de Beaugrande, 1999; van Dijk, 2000a). Ideology forms the basic social representations of the beliefs shared by a group, and precisely function as the framework that defines the overall coherence of these beliefs. Thus, ideologies allow new social opinions, norms and values to be easily inferred, acquired and distributed in a group when the group and its members are confronted with new events and situations (van Dijk, 2000a, pp. 14-15).

Therefore, ideology becomes the foundation of group representations and the group-based nature of ideology and social belief explains how and why social attitudes may be organized as coherently structured sets of group opinions. This is why people may typically disagree about opinions and different groups may have different and/or conflicting goals or interests (van Dijk, 1998, p. 128). Thus ideology becomes the basis for social practice (van Dijk, 2000a), and if related to the subject of this proposal, the discourses in the communication actions and response mechanisms from the Lynas’ rare earth project in Malaysia which are used to amplify or attenuate the risks therefrom, are likely to contain ideologies of the different stakeholders.

It has to be reiterated that risk is embroiled in reflexive modernization (Beck, 1992), which is characterized by the awareness of the problematic consequences of modernity. This awareness is accompanied by uncertainty about how to deal with these [consequences of modernity] due to the extent of ‘unawareness’, as one body of ‘expert’ knowledge is constantly countered by another. Meanwhile, since risk is primarily associated with anxiety, it is injected as an element of unpredictability into the routines of the everyday (Macdonald, 2007). Thus, all events are rooted in discourse and an event count as discursive event if it appear on the discourse planes of politics and the media intensively, extensively and for a prolonged period of time (Jäger & Maier, 2009).

It is also interesting to highlight that within the contexts of the socio-economic and political interests of Lynas’ rare earth project in Malaysia, it is important to recall the arguments of Friedrich Engel’s interpretations of Karl Marx’s conception, wherein it is buttressed that ideology is false consciousness, misguided beliefs or distorted beliefs (For example: Bevir, 1996; Pines, 1993; van Dijk, 2000a). If related to the discourses from Lynas’ rare earth project in Malaysia in online newspapers, different social actors may promote representations that conform to their social beliefs, social norms, social values, attitudes and behaviours. Each may agree or disagree with definitions and opinions of the other on what they mean by risk from the risk event, as well as opportunities, to serve different interests. A group may thus dominate the discourse based on its dominant narratives, but this does not necessarily make the ideology of the dominant group negative.

### **THEORETICAL PROPOSITIONS:**

This study proposes to combine the Social Amplification of Risk Framework (SARF) and the Social Semiotic Theory of Multimodality (SSTM) to explore representations of risks on Lynas’ rare earth project by Malaysian online newspapers. The SARF provides assumptions on how risks are spread or weakened while the SSTM provides assumptions on how contemporary media of communication like online newspapers, use multiple semiotic resources that are called modes, to transmit different, similar or complementing meanings.

The SARF has been applied to research on perception of light pollution (Kim, Choi, Lee, Cho, & Ahn, 2015); perception of climate change and agricultural population (Mase et al., 2015; Renn, 2011); amplification of risks from disease outbreak such as *E. coli* by social agents and news media (Raupp, 2014); and perceptions of nuclear energy risk (Yeo et al., 2014). The SSTM has been applied to: study online news picture galleries (Caple & Knox, 2015) and verbal/visual context, genre and multimodality in online news (Meurer & Machado, 2010). This study proposes to explore the representation of risks in online mainstream and alternative Malaysian newspapers by combining the SARF and the SSTM using the socio-cognitive approach to Critical Discourse Analysis (CDA) to understand how social actors negotiate with and influence socio-cognitive processes, behaviours and responses on the Lynas’ rare earth project in Malaysia. We pre-empt that this study can also uncover the discursive strategies employed by these social actors and produce an online newspaper social amplification and/or attenuation of risk framework. Our position is further strengthened by Binder, Cacciatore, Scheufele, and Brossard (2015), who re-echoed that despite over two decades long-standing assumptions of the SARF and torrents of research, little evidence exists to understand the role of news media, which has been theorized as one of the social amplification stations within the SARF.

## **The Social Amplification of Risk Framework (SARF)**

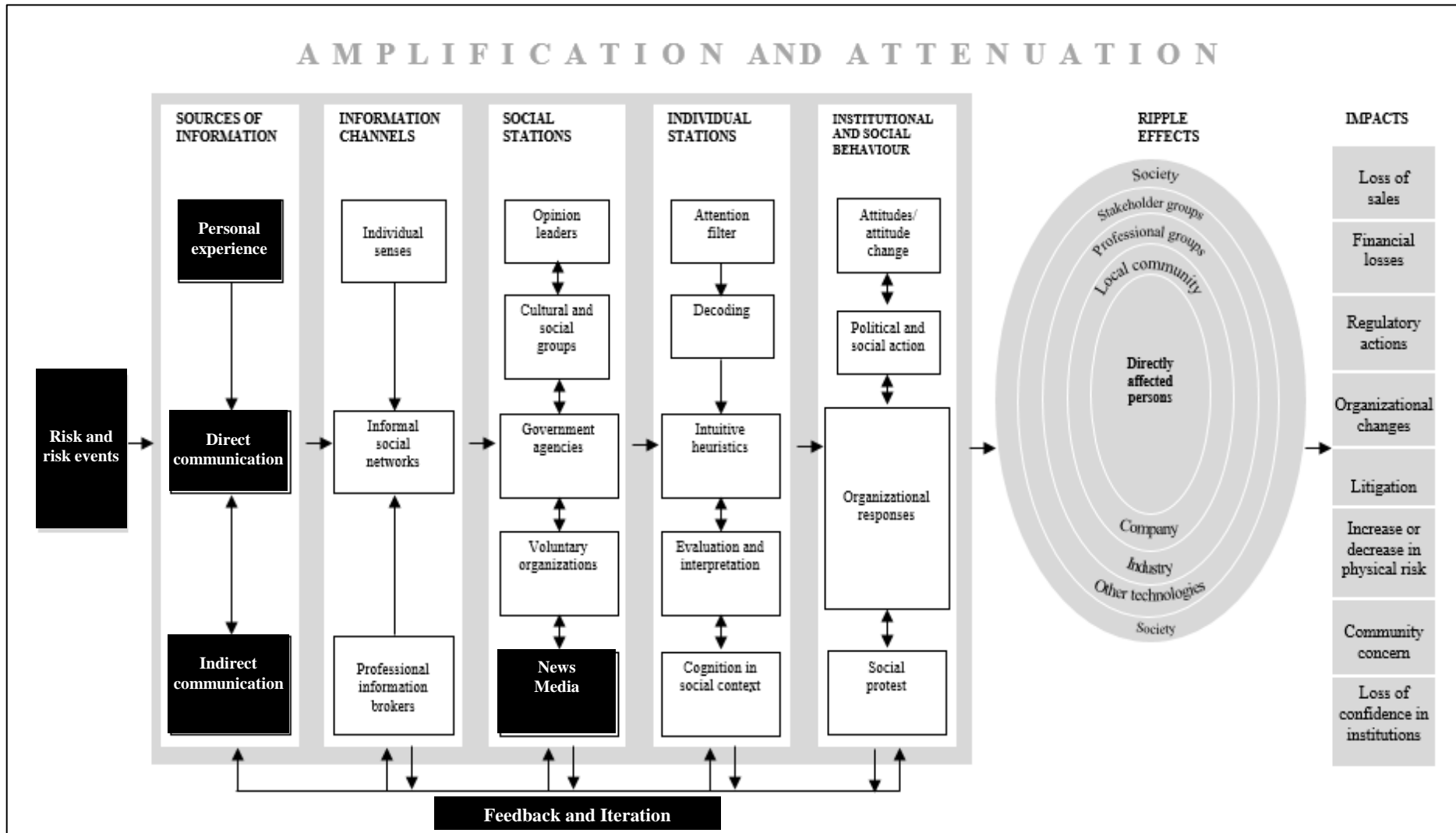
The main thesis of the SARF is that changes in risk perceptions and responses may depend on psychological, social, institutional, and cultural processes; and that hazards interact with these perspectives to amplify or attenuate public responses to risk or risk event (Kasperson, 2012; Kasperson et al., 1988; Pidgeon & Barnett, 2013). That the SARF may serve to guide efforts to develop, test, and apply to risk problems (Kasperson et al., 1988, p. 180) signifies it can provide a perspective for exploring representations of risks in Malaysian online newspapers' amplification or attenuation of risks from an emerging technology like Lynas' rare earth project in Malaysia. We assume that this can provide experiences on risk representations in new media of mass communication.

The SARF as proposed by Kasperson (2012) and Kasperson et al. (1988) depicts how processes, institutional structures, social group behaviour, and individual responses shape the social experience of risk and contribute to risk consequences by intensifying or weakening signals; and filtering the magnitude of signals based on the attributes of the risk and their importance. The signals are processed by social and individual actors such as: scientists, risk management institutions, news media, activists, social organizations, opinion leaders, personal networks of peers and reference groups and public agencies.

Kasperson et al. (1988) argue that social amplification stations generate and transmit information from and via communication channels and recipients also engage in amplification and attenuation processes of: (1) filtering transmitted messages (2) decoding messages received (3) processing risk information to make inferences (4) attaching social values to the messages to draw implications (5) interacting with one's cultural and peer groups to interpret and validate messages (6) formulating behavioural intentions to tolerate or fight risk or risk manager; and (7) engaging in group or individual actions to accept, ignore, tolerate and/or change the risk.

Malaysian online newspapers have been active in generating and transmitting information, and in providing platforms for amplifiers or attenuators to respond to information on the LAMP. Thus, if explored, these representations can "identify and classify attributes of the risk source and of the social arena that heighten or attenuate the public response to risk" (Kasperson et al., 1988, p. 182). The dynamism of the SARF as a social communication process is also inherent in the assumptions put forward by the proponents that information mechanisms of social amplification of risk may be through direct or indirect experience. The effect may reassure or alarm the receiver and/or provide feedback on the nature, extent and manageability of the hazard. However, since many risks are not experienced directly people learn about risk from other persons and from media. Information flow become a key ingredient in public response and acts as a major amplifier or attenuate through the following attributes: (i) volume (ii) degree to which factual or inferred information is disputed (iii) extent of dramatization and (iv) symbolic connotations from the information and terminologies as acceded to in Kasperson et al. (1988) proposition. The social amplification of risk framework is diagrammatically depicted below in

Figure 1. The aspects of the SARF that will be adapted and integrated with the SSTM for the proposed study have also been highlighted in Figure 1.



**Fig.1:** Social amplification of risk framework [Sources: Kasperson (2012), Kasperson et al. (1988), and Pidgeon and Barnett (2013)]

### **The Social Semiotic Theory of Multimodality (SSTM)**

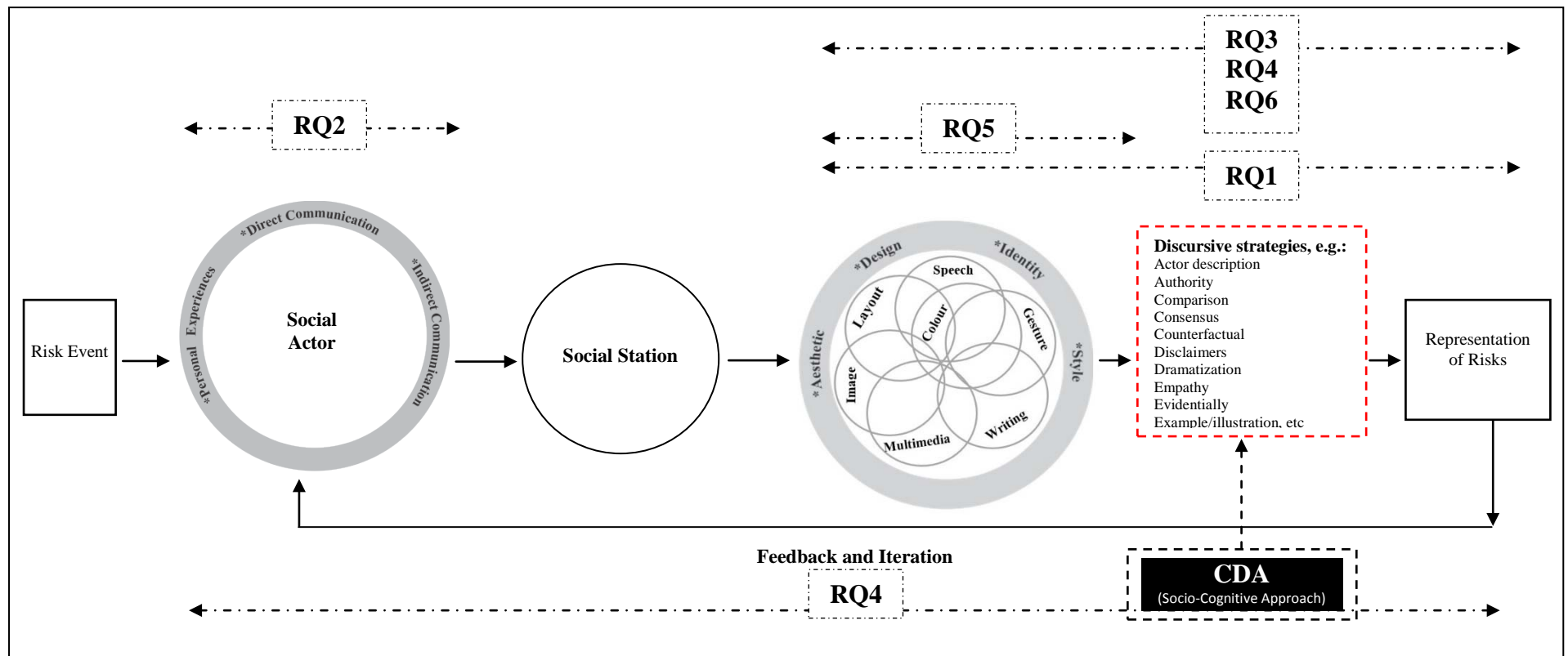
The Social Semiotic Theory of Multimodality assumes that a modality is defined by its physical medium and its particular way of representation in different ways such as language text, image graphics, facial expression, gesture, among others, which are different modalities of information representation (Bernsen, 2008). It is thus a framework for understanding semiotic resources (Caple & Knox, 2015). “Multimodal” indicates different semiotic modes (for instance language and image) are combined and integrated in a given instance of discourse or kind of discourse like speech with intonation, voice quality, facial expression, gesture, posture or writing with typographic expression, illustration, layout and colour (Leeuwen, 2015). However, we argue that these resources of discourse are the multiple modes which the Social Semiotic Theory of Multimodality uses to describe phenomenon in contemporary communication on the Internet.

Thus, it can be argued further from Leeuwen’s point of view that Multimodality focuses on the functionality of language in conveying particular, similar, different and/or complementary meanings. This explains why Bernsen (2008) argues that modalities differ in expressiveness and suits representation of different kinds of information. For instance, a photo-realistic image generally expresses more about how a particular person looks than a linguistic description. However, this is also determined by the perceptual, cognitive, and other properties of the receiver of the information that is represented.

Thus, since multimodality is interspersed in contemporary communicative messages like in Malaysian online newspapers; and Bezemer, Diamantopoulou, Jewitt, Kress, and Mavers (2012) explain that with multimodality, meaning-makers draw on a multiplicity of modes to make meaning; then the Social Semiotic Theory of Multimodality, if integrated with the Social Amplification of Risk Framework can be used to understand human communication from a socially related risk event like Lynas’ rare earth project in Malaysia. More so, multimodality focuses on the common properties of, and differences between semiotic modes, and on the ways in which they are integrated in multimodal texts and communicative events. This explains its use within the confines of news and online media to analyze online news picture galleries (Caple & Knox, 2015) and verbal and visual context, genre and multimodality in online news (Meurer & Machado, 2010).

The Social Semiotic Theory of Multimodality is also an integral part of Discourse Analysis (G. R. Kress & Leeuwen, 2001; van Dijk, 2008). The relationship is related with the composition, content and design of digitized media like online newspapers. Interestingly, within the assumptions of SSTM, the tools for making and communicating meanings are shaped by social and economic factors. Therefore, environments, conditions and choices of contemporary communication [like in Malaysian online newspapers], are mediated by the interests of members of social groups so that practices, resources and technologies of communication respond, at different rates at different times, to social economic and technological developments (G. Kress, 2010, p. 19). The proposed online newspaper social amplification of risk conceptual framework is depicted overleaf in Figure 2. It is embedded with discursive strategies within the socio-cognitive approach of CDA. It is however imperative to note that the SSTM is yet to be visualized as a model to depict assumptions of how multimodality works in contemporary communication. Nonetheless, this proposal elaborates on how to integrate aspects of the SARF, SSTM and the socio-cognitive approach to CDA and consequently visualizes an online newspaper social amplification and/or attenuation of risks conceptual framework.





**Fig. 1:** Proposed conceptual framework for an online newspaper social amplification/attenuation of risks

**Adapted from:** Social Amplification of Risk Framework (Kasperson, 2012; Kasperson et al., 1988; Pidgeon & Barnett, 2013); and Social Semiotic Theory of Multimodality (G. Kress, 2010); discursive strategies in discourse analysis (van Dijk, 2000a, 2000b).

**Research Questions:**

1. What specific risks are represented and what is the relationship between the risks represented?
2. Who are the social actors that define these risks?
3. How do the social actors define these risks?
4. How do the social actors amplify or attenuate these risks?
5. What are the modes used to convey the meanings of these risks?
6. How are meanings conveyed in the modes used to represent these risks?

**Social actors of Amplification/Attenuation includes:**

Community organizations, environmental organizations, experts, farmers, general public, governments, industry, lay people, politicians, scientists, etc.

**Social station of Amplification/Attenuation includes:**

Alternative and Mainstream Online Malaysian Newspapers

**Discursive strategies in the Socio-cognitive Approach to CDA include:**

Actor description (meaning), Authority (argumentation), Topos or traditional theme (argumentation, history), Categorization (meaning), Comparison (meaning, argumentation), Consensus (political strategy), Counterfactual (meaning, argumentation), Disclaimers (meaning), Distancing (meaning, lexicon), Dramatization (rhetoric), Empathy (meaning), Euphemism (rhetoric, meaning), Evidentially (meaning, argumentation), Example/illustration (argumentation), Explanation (meaning, argumentation), Fallacies (argumentation), Generalization (meaning, argumentation), Humanitarianism, Hyperbole (rhetoric), Implication (meaning), Illegality (argumentation), Interaction and context, Irony (rhetoric), Legality (argumentation), Lexicalization (style), Metaphor (rhetoric), National self-glorification (meaning), Negative other presentation (semantic macro-strategy), Norm expression, Number game (rhetoric, argumentation), Openness, honesty (argumentation), Polarization (meaning), Positive self-presentation (semantic macro-strategy), Populism (political strategy), Presupposition (meaning), Pseudo-ignorance (meaning, argumentation), Reasonableness (argumentation), Repetition (rhetoric), Situation description (meaning), Vagueness (meaning), Victimization (meaning)

## METHOD:

This study proposes a qualitative textual analysis to explore online texts from Malaysian newspaper representation of risks. In digital media, textual analysis, whether written or spoken, visual or aural can be used to examine elements of websites, games and other digital spaces and qualities of digital devices. Digital text analysis focuses on written word, examining interactions on the web. Whatever the focus, textual analysis has to be extremely sensitive to differing cultural contexts. For instance, colour on website or digital device hardware like the iPhone cover, can convey different things to people whose culturally derived associations with colour symbolism differ. For example, in Brazil the colour purple signifies mourning, in Asia it is luxury, in Britain it is royalty, and frivolity in the US. However, subcultures may offer counter signifiers (Reed, 2014).

The proposal is to restrict the universe of the study to all Malaysian mainstream and alternative English Language online newspapers. The suggested period is from 2011 and 2014 because while approval to construct the LAMP was issued in 2008, contents will only be sampled from June 2011 when the issue became a matter of public debate following its report by the *New York Times*. Samples will be extended to September 2014, when it got a two-year permanent operating license.

This study proposes to use all news from the search results published in all available content categories in the six newspaper titles to be sampled. Some of observed content categories in online Malaysian mainstream and alternative online newspapers include: analysis, features, hard news, interview, opinion (comment/letter/views), and retraction. Specifically, units of analysis proposed include: headline/sub-headline, lead, sub-lead, pull quote, photograph, photo caption and narratives in body text (See for example: Tankard, 2001). In addition, news video will also be included as unit of analysis since news videos are also found in Malaysian online newspaper contents.

A total of six newspapers, consisting three mainstream (*New Straits Times*, *The Star*, *The Edge*) and three alternative (*Malaysiakini*, *The Malaysian Insider* and *Free Malaysia Today*) online newspapers are proposed. It is pertinent to indicate that there are conflicting online newspaper readership statistics on Malaysia. This contrasts with stable statistics provided by the Audit Bureau of Circulations (ABC) of Malaysia on circulation and readership of print media and digital versions. The conflicting stats may be due to the transient nature of the online media audience and the differences in criteria used by the different raters to rank online newspapers.

The news will be sourced from online archives of proposed online newspapers using the following separate or combined key words: Lynas, rare earth, Kuantan, Pahang and Malaysia. All proposed online newspapers offer free access to their news except *Malaysiakini*. Therefore, one month Premium Subscription would be paid to access *Malaysiakini*'s archive to allow the researchers have full access to all news within the period of the study. The news search results will then be downloaded and saved in a Portable Document Format (PDF). News search results will be skimmed and scanned to ensure that only news retrieved contain search words in the units of analysis. News retrieved will be saved with original filenames to prevent duplication. Where multiple files exist with same filename, date and time of publication and content will be compared. If there is a difference, the filename will be altered by adding a combination of number and letters, e.g. 1a, 1b, and so on.

This search procedure fits into the concept of relevance or purposive sampling as suggested by Krippendorff (2013) who argues units that need to be considered for analysis can be systematically lowered, so that resulting units of text, which are not meant to be representative of a population of texts but rather of relevant texts, excluding the textual units that do not possess relevant information, can be obtained. Thus, when the exclusion criteria have exhausted their ability to shrink the population of relevant texts to a manageable size, the analysts may apply other sampling techniques.

The newspaper titles will be firstly selected using purposive sampling, a non-probability sampling, based on circulation and readership figures as found in previous studies (For e.g.: Hamidah et al., 2012; Rooke & Amos, 2014; Tong, 2014). Online newspapers are purposively proposed because of the ubiquitous nature of online news, and widespread publicity of information on Lynas rare earth processing in Malaysia in online media. There is also possible access to information on the Internet since Malaysians spend approximately between 20 to 22 hours weekly online according to Nielsen's Southeast Asia Digital Consumer Report (PRNewswire, 2014, p. 63). There are also at least 18.6million Internet users in Malaysia according to the Malaysian Communications and Multimedia Commission (MCMC's) Internet users' survey (MCMC, 2013). There are millions of aggregated unique daily visitors to the different online Malaysian newspaper websites according to statistics below. Malaysian English Language online newspapers will also be used due to barrier in language for one of the researchers. Newspaper titles will also be purposively select the online newspaper based on sociology according to: ownership interests (pro-government/government-aligned and opposition/opposition-affiliated newspapers) and digital news media landscape divides in Malaysia, that is, mainstream and alternative online newspapers.

Secondly, news samples will be selected using simple random sampling from a sampling frame. According to Babbie (2013, p. 144), sampling frame is a list of units in a population from which a sample is located. Selecting the sample from a sampling frame is possible because a sampling frame can be generated from the retrievable news on Lynas rare earth project in Malaysia. This sampling frame will comprise different news genre in the forms of content categories such as hard news, features, analysis, opinion, and so on. This will ensure that news in every content category, which contains different forms and structure of discourse on Lynas rare earth project in Malaysia is considerably represented.

Simple random sampling is a probability sampling technique that allows elements in the population equal chances of selection. A table of random numbers from 00001 to 99999 as suggested by Babbie (2013) will be used and news retrieved from the archives will be assigned serial numbers that are independent across content categories. The units of the random numbers to be selected will depend on the total number of news from the news search results. If each content category total falls within a two-digit, for example, in tens, then the random numbers will be generated in two units from the table of random numbers. If the result is in three digits, that is, in hundred, a three-digit format will be used while if the result is in thousand, that is four digits, then, a four-digit format will be used to select the samples to be analyzed, and so and so forth. The first number in the table of random numbers will be selected randomly and the right-most digits will be selected. Subsequent numbers will be selected downwards in the column and then back to the top of the next column until all possible numbers within the sampling frame for each content category have been selected.

The first proposed mainstream online newspaper is the *New Straits Times (NST) online* ([www.nst.com.my](http://www.nst.com.my)). It publishes print, digital and online editions and is owned by Media Prima Berhad (Zaharom, 2008; Zaharom & Wang, 2004), which presently controls almost half of daily newspaper circulation and readership in Malaysia. Its *Harian Metro* is the top Bahasa Malaysia newspaper (WAN-IFRA, 2014). Media Prima Group was ranked first among newspaper related websites accessed from mobile devices in Malaysia with 2,438,000 unique visitors in April, 2015 based on the Malaysia Digital Association (MDA) and comScore, Incorporated Media Metrix ranking (MDA & comScore, 2015). Mobile device online website audience statistics is significant because Malaysia has the second highest smartphone penetration of 80 percent in Asia Pacific next to Hong Kong and Singapore's 87 percent (Nielsen, 2014). Additionally, globally, Malaysia and four other countries in Asia – Singapore, Hong Kong, China and South Korea are the only who use smartphones more than computers as primary devices for Internet access (Lee, 2014). It is thus assumed that the mobile users accessing Media Prima Berhad are also likely to access their news portals, including *NST online*, which is a privately owned company whose ownership interests will likely align with interests of the ruling party and government considering its alliance with the ruling BN coalition.

The second is *The Star online* ([www.thestar.com.my](http://www.thestar.com.my)), which is a major online newspaper in Malaysia (Kuppusamy, 2013; MDA, 2013). It publishes print, digital and online versions too and ranked with 1,122,000 unique visitors as the most accessed mainstream newspaper from desktop computers in the April 2015 MDA and comScore rankings of top web entities in Malaysia (MDA & comScore, 2015). *The Star* is owned by the Malaysian Chinese Association (MCA) (WAN-IFRA, 2014; Zaharom, 2002; Zaharom & Wang, 2004). The MCA is the second most powerful constituent member of the ruling coalition government, Barisan Nasional (BN) or National Front alliance in Malaysia (Zaharom, 2002; Zaharom & Wang, 2004). The BN has triumphed in all national elections in Malaysia since 1957, despite strong oppositions. *The Star online* is thus considered a pro-government newspaper since the MCA is the second largest party in the ruling BN coalition.

The third is *The Edge online* ([www.theedgemarkets.com/my](http://www.theedgemarkets.com/my)), which serves the corporate and elite segment of newspaper audience in Malaysia (PRNewswire, 2014). It is proposed for the study as a specialized news media that focuses on business and investment market and financial news. *The Edge*, which is aligned to opposition political parties, has an array of other print platforms and recently had its print license suspended for three months from July 27, 2015 for its reportage of the financial and political crises from the One Malaysian Development Berhad (1MDB). *The Edge online* is published by the Edge Media Group, a partner with publishers of *The Malaysia Insider*. Readership statistics of *The Edge online* was not available in previous Ranking Metrix cited above. But it is proposed as an opposition-aligned specialized business and financial news platform because rare earth processing is an enterprise and a multi-billion dollar investment across high-tech manufacturing of: electronics, cars, computers, mobile phones, and nuclear-related technologies, among others. Such huge financial-oriented technology attracts specialized business and financial investment discourses and *The Edge* can represent power negotiations and domination of vested interests. *The Edge* also published extensively on Lynas rare earth project in Malaysia compared to other dedicated online business and financial news portals.

The first alternative online newspaper is *Malaysiakini* ([www.Malaysiakini.com](http://www.Malaysiakini.com)). It is ranked the first alternative newspaper web entity accessed from desktop computer with 1,333,000 unique visitors; and the first alternative newspaper accessed from mobile device with 2,128,000 unique visitors in Malaysia in April 2015 (MDA & comScore, 2015). *Malaysiakini* promotes independent media but uses its profits and donations from civil society, to expand operations and construct new premises, like the business portal *KiniBiz* and Internet TV news site *KiniTV*. It regularly waives subscription fees to provide free access to news of national significance, like the 2013 general elections, the MH370 tragedy (WAN-IFRA, 2014, p. 17) and as found in the search for news samples, on some news on Lynas rare earth project in Malaysia. It is thus a pro-opposition and business-oriented alternative online only newspaper.

The second alternative online newspapers is *The Malaysian Insider* ([www.themalaysiainsider.com](http://www.themalaysiainsider.com)). It is the second most accessed alternative online newspaper on desktop computer with 1,073,000 unique visitors; and also the second alternative newspaper website visited from mobile devices with 1,317,000 unique visitors in Malaysia in April 2015 (MDA & comScore, 2015). *The Malaysia Insider* is therefore considered a major alternative online newspaper for its strong pro-opposition stance and its critical substitute views as a vibrant alternative online newspaper, similar to *Malaysiakini*.

The third alternative online newspapers is *Free Malaysia Today* ([www.freemalaysiatoday.com](http://www.freemalaysiatoday.com)). It is a popular news portal, which allegedly received over 100 million hits since its launch in 2014. It was ranked the third alternative newspaper web entity visited from desktop computer in Malaysia with 531,000 unique visitors in April 2015 (MDA & comScore, 2015). Its editors pride themselves on independence and journalistic role as government watchdogs. It is the newest of the three alternative online news portals proposed for this study. It began as a blog operated by members of the opposition (Lumsden, 2013) and is known for its criticism of both [Malaysia's] ruling BN coalition government and opposition political parties (Keong, Naim, & Zamri, 2014). *Free Malaysia Today* published slightly more negative opposition stories than *Malaysiakini* and *Malaysia Insider* in a study on Malaysia's online news portal coverage of the 2013 General Elections in Malaysia (Lumsden, 2013).

Data will be analyzed using Teun van Dijk's Socio-Cognitive Approach of Critical Discourse Analysis (Ruth Wodak, 2009; van Dijk, 2009a). The Socio-Cognitive Approach to CDA (also Critical Discourse Studies – CDS) has three main components: social cognition, ideology and social situations (van Dijk, 2009a). Firstly, *social cognition* accounts for the beliefs or social representations shared with others in the group or community. *Ideology* is the fundamental social beliefs that organizes and controls social representations of groups or their members and is used to legitimize dominance, which is defined as power abuse. *Social situations* refer to the micro (local) and macro (global) structures of society, that is, of individual social actors and their situated interactions, on the one hand, and of social groups, movements, organizations and institutions, and their relations, such as power and dominance.

Thus in CDA, language use, discourse, verbal interaction and verbal communication belong to the micro-level of the social order. Power, dominance and inequality between social groups belong to a macro-level of analysis. Therefore, CDA theoretically bridges between micro and macro approaches (van Dijk, 2008). It also focuses on how discourse

structures influence mental representations. At the global level of discourse, topics may influence what people see as the most important information of text or talk, and thus correspond to the top levels of their mental models. For example, expressing a topic in a news headline may powerfully influence how an event is defined in terms of a preferred mental model (van Dijk, 2008). So, discourse structure may influence the formation and change of mental models and social representations. If dominant groups, and especially their elites, largely control public discourse and its structures, they thus also have more control over the minds of the public at large. However, such control has its limits. The complexity of comprehension, and the formation and change of beliefs, are such that one cannot always predict which features of a specific text or talk will have which effects on the minds of specific recipients (van Dijk, 2008). Generally, CDA is typically interested in the way discourse produces or reproduces social domination, that is, the power abuse of one group over others, and how dominated groups may discursively resist such abuse (van Dijk, 2009a). Hence, CDA can be used to understand different interests and can question: how text is positioned, the interests it serves or negates, and its consequences as suggested by Janks (1997). This can then be used to establish a pattern in negotiating with and influencing significant actor's interpretations and understanding, and their meanings. This can generate understanding on how social actors negotiate with and influence social-cognitive processes, behaviours and responses to the Lynas rare earth project in Malaysia.

### **Conclusions and Contributions to Theory and Knowledge**

The first expected outcome from this study is a synthesized framework from the SARF and SSTM for an online newspaper social amplification and/or attenuation of risks framework. Our contributions to theory and knowledge are inspired, first, by criticisms of the SARF, especially on the role of the news media as a social amplification station wherefrom Binder et al. (2015) specifically reechoed earlier criticism that despite over two decades assumptions on the SARF and torrents of research, little evidence exists to understand the role of news media, theorized as a social amplification station within the SARF. Pidgeon and Barnett (2013) argue too that the SARF ignores the need to understand actors' perspectives and the positive impacts of risks amplification.

Therefore, our study will contribute specifically to theoretical arguments of the role of social actor(s) and social amplification station(s) in the SARF in the process of amplification and/or attenuation of risks. We will also focus on iteration and feedback as institutional and social behaviours that may result from the actions or inactions of the social actors. Since we propose to integrate a digital perspective to the SARF with the SSTM to cater for characteristics of online newspaper news, we will also contribute on how multiple modes are used to convey different, similar, competing, complementary meanings in contemporary digital communication.

The shortcomings of the SARF can also be exploited within assertions by the Academy of Sciences Malaysia and the National Professors' Council (NPC) that emerging technologies like rare earth, present environmental risks and potential economic opportunities. Arguably, if proponents of SARF (Kasperson, 2012; Kasperson et al., 1988) acknowledge that the "process of transmitting is more complex than the electronic metaphor implies", then this study can improve theoretical understanding of the SARF, SSTM and risk representations.

It is pertinent to highlight too that most studies on risk representations in the media do not specify or infer the data analytical approach adopted. It is also uncertain why studies on risk representations in mass media rarely use CDA. However, we propose to use the socio-cognitive approach to CDA because we envision that it can be used to understand and reflect discourses that amplify or attenuate risks that reinforce and negotiate meanings from information, responses and response mechanisms employed by the social actors who have a stake in Lynas' rare earth operations in Malaysia. The relationship between CDA and Multimodality also makes this proposal feasible since the Social Semiotic Theory of Multimodality is also considered an integral part of Discourse Analysis (G. R. Kress & Leeuwen, 2001; van Dijk, 2008). Their relationship, we posit, can be related to the composition, content and design of digitized media like online newspapers.

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