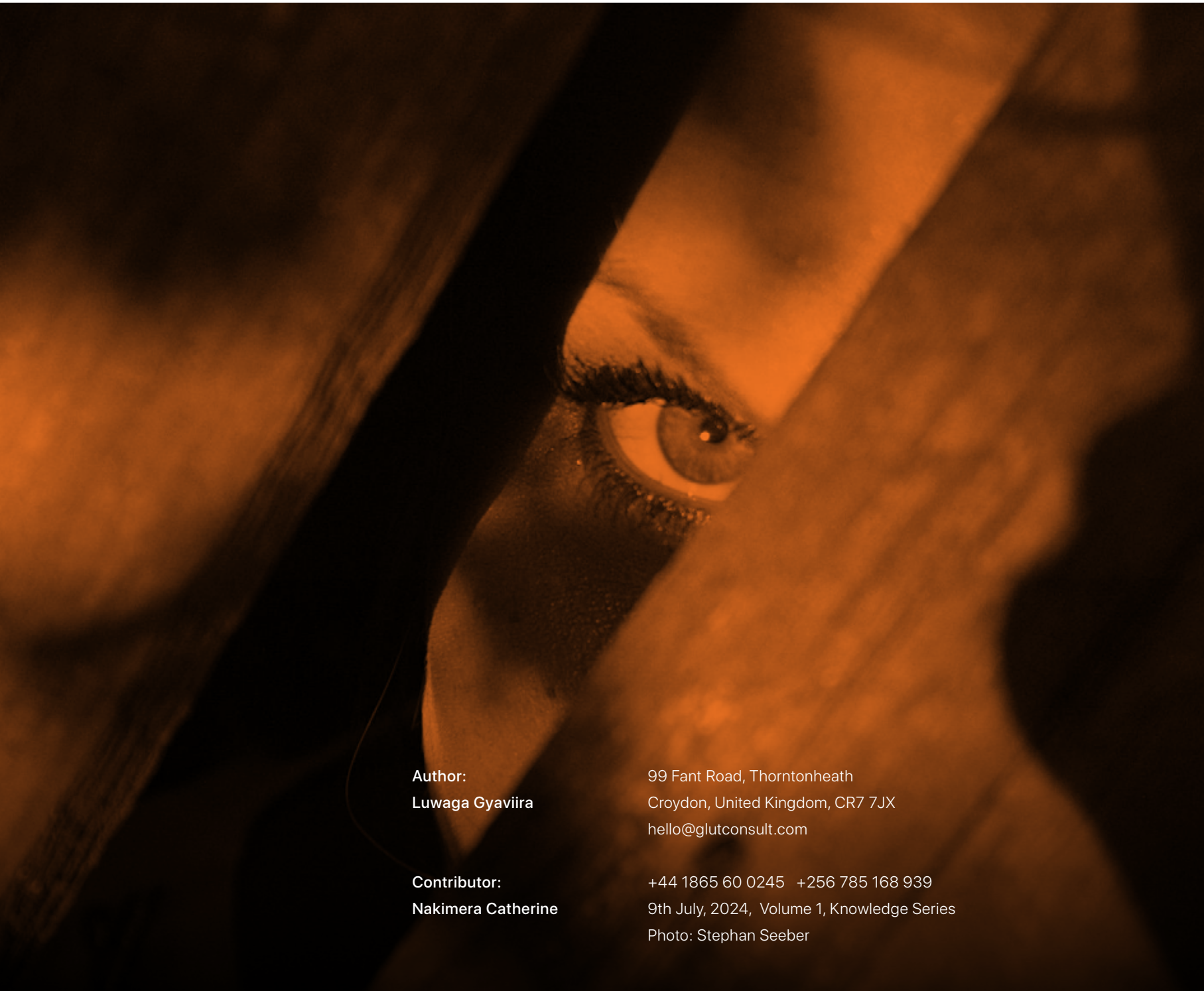




The Strategic Human Communication Knowledge Series



The Extended Parallel Processing Model



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9th July, 2024, Volume 1, Knowledge Series
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Preface:

In an era characterized by rapid advancements and heightened global connectivity, the dissemination of accurate and impactful health communication has never been more critical. As public health professionals, communicators, and policymakers strive to address complex health challenges, the need for effective communication strategies becomes paramount. One such strategy that has garnered significant attention and application is the Extended Parallel Processing Model (EPPM).

The Extended Parallel Processing Model, developed by Dr. Kim Witte, offers a robust framework for understanding how individuals respond to fear appeals in health messages. By integrating elements of perceived threat and perceived efficacy, the EPPM provides valuable insights into the psychological processes that drive individuals towards protective behaviours or, conversely, towards fear control responses that undermine message effectiveness.

This knowledge series toolkit is designed to serve as a comprehensive guide for those seeking to harness the power of the EPPM in their health and humanitarian communication efforts. It encompasses theoretical foundations, practical applications, and real-world case studies that illustrate the model's utility across various health contexts and geographic regions.

The EPPM Knowledge Series is structured to provide a deep dive into the model's core components, exploring how the interplay between threat and efficacy influences audience reactions. We delve into the nuances of crafting messages that not only highlight the severity and susceptibility of health threats but also empower individuals with actionable steps to mitigate those threats. By doing so, we aim to equip communicators with the tools necessary to design fear appeals that are both ethically sound and highly effective.

Each section in this series builds upon the previous

one, starting with the theoretical underpinnings of the EPPM and progressing to detailed analyses of successful and unsuccessful fear appeals. We examine a diverse range of case studies from around the globe, providing insights and lessons learned. From the H1N1 influenza outbreak in the United States to the Ebola crisis in West Africa, from Zika virus prevention in Brazil to work safety initiatives in Sweden, these case studies offer valuable perspectives on how the EPPM can be tailored to different cultural and situational contexts.

The knowledge series also addresses common challenges and misconceptions associated with fear appeals, offering evidence-based strategies to overcome these hurdles. By highlighting best practices and providing practical guidelines, we aim to foster a deeper understanding of how to balance the critical elements of threat and efficacy in health communication.

As you embark on this journey through the EPPM Knowledge Series, we hope you will find the content both enlightening and actionable. Our goal is to empower you with the knowledge and skills to create compelling, effective messages that inspire positive behaviour change and ultimately, improve public health outcomes.

We extend our gratitude to the researchers, practitioners, and communities who have contributed to the development and application of the EPPM. Their dedication and insights have been instrumental in advancing our understanding of fear appeals and their role in health communication.

Thank you for joining us in this exploration of the Extended Parallel Processing Model. We look forward to your continued engagement and to the positive impact this knowledge series will have on your work in communication.

Gyaviira Luwaga - **Glut Consult**

The Extended Parallel Processing Model

The Extended Parallel Processing Model (EPPM), developed by Kim Witte in 1992, is a theory that explains how individuals respond to fear appeals in persuasive messages. The model integrates elements of the Health Belief Model and the Protection Motivation Theory to provide a comprehensive framework for understanding how people process and respond to threatening information. The EPPM is particularly relevant in health communication and humanitarian contexts, where fear appeals are often used to motivate protective behaviours.

Core Variables of the EPPM

1. Fear Appeal

Fear appeal is a communication strategy that emphasizes the negative consequences of failing to adopt a recommended behaviour. It aims to elicit fear in the audience to motivate them to take protective action. Effective fear appeals must balance the level of fear induced; too much fear can lead to defensive avoidance, while too little may not motivate action.

2. Perceived Severity

Perceived severity refers to an individual's belief about the seriousness of the consequences associated with a threat. If the perceived severity is high, individuals are more likely to be motivated to take action to avoid the threat. For instance, in a health communication campaign, emphasizing the severe health complications of untreated diabetes

can increase perceived severity.

3. Perceived Susceptibility

Perceived susceptibility is an individual's belief about the likelihood of experiencing the threat. Higher perceived susceptibility increases the likelihood that individuals will consider taking protective actions. For example, if people believe they are at high risk of contracting a disease, they are more likely to engage in preventive behaviours.

4. Response Efficacy

Response efficacy is the belief in the effectiveness of the recommended protective action in mitigating the threat. If individuals believe that the suggested behavior will effectively reduce the threat, they are more likely to adopt it. For example, believing that wearing masks effectively prevents the spread of a virus can increase compliance with mask-wearing guidelines.

5. Self-Efficacy

Self-efficacy refers to an individual's confidence in their ability to perform the recommended protective behaviour. High self-efficacy means individuals feel capable of taking the necessary actions to protect themselves. For instance, confidence in one's ability to quit smoking can increase the likelihood of attempting and succeeding in quitting.

6. Multiplicative Nature

The EPPM posits that the interaction between perceived severity, perceived susceptibility, response efficacy, and self-efficacy determines the overall effectiveness of fear appeals. This interaction is multiplicative, meaning that all

factors must be present at sufficient levels to elicit a protective behavioural response. If any factor is missing or insufficient, the likelihood of adopting the protective behaviour decreases.

Whilst the theory posits, interesting contributions in praxis, scholars have asked themselves the validity of adopting the fear appeal. Shade et al (2019) undertook a study-experiment to test whether visual elements as health warnings on cigarette packaging. The findings suggested that health warnings had no influence on high nicotine users. However, the study asserted that the impact of the graphical elements had an impact on low dependence nicotine users.

The EPPM provides a combination of the fear appeal the parallel process theory (PPM, Leventhal, 1970) and the protection Motivation theory (PTM, Rogers, 1975, 1983) focusing on how we make decisions using our emotions to determine our behaviours. Ruiters, Abraham, & Kok (2001) has expanded on Witte's work by asserting that while using fear appeals, practitioners must be careful to avoid defensive reactions. In their findings they argue that perceived threat and efficacy are essential components in motivating protective behaviours (Ruiters, Abraham, & Kok, 2001). Whilst looking at the nature of efficacy, (Maloney, Lapinski, & Witte, 2011) has contributed to this study by highlighting the importance of considering individual differences in response to fear appeals, such as personality traits and previous experiences, which can influence the effectiveness of the EPPM.

Application of the Extended Parallel Processing Model (EPPM) in Humanitarian and Health Communication

The Extended Parallel Processing Model (EPPM) is a robust framework for designing effective fear appeals in both health and humanitarian communication. The model helps communicators understand how individuals process threatening information and what motivates them to take protective actions. Here, we explore how the EPPM can be applied in these contexts by focusing on its core components: fear appeal, perceived severity, perceived susceptibility, response efficacy, and self-efficacy.

Humanitarian Communication

Humanitarian communication often involves disseminating information about crises, such as natural disasters, disease outbreaks, or conflict situations. The goal is to motivate protective behaviours, promote safety, and ensure public compliance with recommended actions.

In the first section, we shall explore situations using the core tenets and propose appropriate courses of action using the EPPM variables. In the later sections of this application, we shall explore actual case studies in which the theory has been used to share more practical insights on how one can adopt its variables drawing from real life experiences.

1. Fear Appeal



Example: In the context of a natural disaster, such as a hurricane or earthquake, the communication campaign might use images and stories of past disasters to evoke fear.



Photo By: Gyaviira Luwaga - Rhino Camp _ GIZ RUWASS

- **Application:** Communicators should use fear appeals to highlight the immediate dangers posed by the crisis (e.g., severe injuries, loss of life) to capture attention and convey urgency.

2. Perceived Severity

- **Example:** Describing the potential impacts of the disaster, such as widespread destruction, long-term displacement, and severe health risks.
- **Application:** Messages should clearly outline the serious consequences of not taking recommended actions, such as evacuating or seeking shelter.

3. Perceived Susceptibility

- **Example:** Emphasizing that all residents in the affected area are at risk, regardless of their specific location within the region.
- **Application:** Campaigns should personalize the risk, making it clear that the threat is real and immediate for everyone in the target audience.

4. Response Efficacy

- **Example:** Providing information about the effectiveness of specific protective actions, such as using emergency kits, following evacuation routes, and adhering to safety guidelines.
- **Application:** Ensure that the recommended actions are portrayed as effective in mitigating the threat, backed by evidence or expert endorsements.

5. Self-Efficacy

- **Example: Offering step-by-step** instructions on how to prepare for the disaster, including assembling emergency supplies and creating family communication plans.
- **Application:** Empower individuals by showing them that they have the capability to take the necessary steps to protect themselves and their families.

Note:



The ideas proposed using this theory are not cast and stone. Different situations present practitioners with different applicability options that require quick and measured thinking.

Careful and measured evaluation of audiences needs to be made before adopting an approach. For example in this digital era, where information is shared very quickly without control, careful consideration needs to be taken when using the **fear appeal** as it may present draw backs that can destroy an organisation's reputation.

In such cases, adopting **perceived severity** and **perceived susceptibility** could be a preferred option under such circumstances.

Health Communication Guide

Health communication often involves campaigns aimed at preventing disease, promoting healthy behaviours, and managing public health emergencies.

1. Fear Appeal

- **Example:** During a public health crisis like a pandemic, the campaign might use stark warnings about the dangers of the disease, including severe illness and death.
- **Application:** Use fear appeals to highlight the serious health risks associated with the disease, ensuring that the message captures attention and conveys the urgency of the situation.

2. Perceived Severity

- **Example:** Describing the potential severe health outcomes of the disease, such as long-term complications, hospitalization, and death.
- **Application:** Communicate the severity of the health threat clearly and convincingly, using data and personal stories to illustrate the potential consequences.

3. Perceived Susceptibility

- **Example:** Highlighting that everyone, regardless of age or health status, is at risk of contracting the disease and suffering severe outcomes.
- **Application:** Ensure that individuals understand their personal risk and the likelihood of being affected by the disease.

4. Response Efficacy

- **Example:** Providing evidence-based information about the effectiveness of preventive measures, such as vaccination, mask-wearing, and social distancing.
- **Application:** Promote the recommended health behaviors as effective ways to prevent infection and protect oneself and others.

5. Self-Efficacy

- **Example:** Offering practical advice and resources on how to implement preventive measures, such as how to correctly wear a mask or access vaccination services.
- **Application:** Boost individuals' confidence in their ability to perform the recommended behaviors by providing clear, actionable guidance and support.



Note:

In health related emergencies, we can ask ourselves a simple question.

Do fear appeals actually work?

On the next page, you will find 3 case studies that present evidence on the effect of fear appeals in health communication. Therefore, it is right to assert that indeed fear appeals can be effective in health emergencies if they are appropriately designed and applied, leveraging high levels of perceived threat and efficacy as posited by the extended parallel processing model. Here are some examples:

Effectiveness of Fear Appeals in Health Emergencies

1. H1N1 Influenza Outbreak:

- **Study Background:** During the H1N1 influenza outbreak, public health campaigns used fear appeals to promote vaccination.
- **Variables:** High threat (severity of H1N1) and high efficacy (effectiveness of the vaccine).
- **Outcome:** Campaigns that successfully conveyed the serious threat of the H1N1 virus and the efficacy of vaccination saw increased vaccination rates.
- **Example:** A study by Wood and colleagues (2010) found that messages highlighting the severe consequences of H1N1 infection coupled with clear, actionable steps to get vaccinated led to higher vaccine uptake.

Reference:

Wood, S., et al. (2010). "The impact of fear appeals on the effectiveness of health campaigns during the H1N1 influenza outbreak." *Health Communication*, 25(8), 737-744.

2. Ebola Virus Outbreak in West Africa:

- **Study Background:** During the Ebola virus outbreak, fear appeals were used to promote hygiene practices and safe burial procedures.
- **Variables:** High threat (deadly nature of Ebola) and high efficacy (effectiveness of hygiene practices and safe burial).
- **Outcome:** Effective fear appeal campaigns that balanced high threat messages with high efficacy actions (like proper handwashing and avoiding contact with the deceased) led to increased compliance with health advisories.
- **Example:** A study by Jalloh et al. (2015) highlighted that fear appeals were effective when accompanied by clear, actionable health guidelines.

Reference:

Jalloh, M. F., et al. (2015). "Impact of fear appeals on public health behaviour during the Ebola outbreak." *Journal of Infectious Diseases*, 212(Suppl 2), S233-S240.

3. Zika Virus Outbreak:

- **Study Background:** During the Zika virus outbreak, campaigns used fear appeals to encourage pregnant women to take precautions against mosquito bites.
- **Variables:** High threat (birth defects caused by Zika) and high efficacy (preventive measures like using mosquito repellent and avoiding mosquito-prone areas).
- **Outcome:** Campaigns that effectively communicated the severe risks of Zika to unborn children and provided clear preventive measures saw higher adherence to protective behaviours.
- **Example:** A study by Blaney and colleagues (2016) showed that fear appeals were successful in promoting mosquito bite prevention behaviors among pregnant women.

Reference:

Blaney, D. D., et al. (2016). "The impact of fear appeals on protective behaviors during the Zika virus outbreak." *Emerging Infectious Diseases*, 22(5), 913-920.

Conditions for Effectiveness

- **Perceived Threat:** The audience must believe that the health threat is severe and likely to affect them.
- **Perceived Efficacy:** The audience must believe that the recommended actions are effective and that they are capable of performing these actions.

Lessons Learned

- **Balancing Threat and Efficacy:** High-threat messages can lead to fear control responses (e.g.,

denial, avoidance) if not paired with high efficacy. Thus, messages should always provide actionable steps that individuals can take to protect themselves.

- **Clear Communication:** Providing clear, concise, and practical steps to mitigate the threat is crucial for the success of fear appeals.
- **Cultural Sensitivity:** Messages must be culturally sensitive and tailored to the audience's context to be effective.





Global Case Studies
Using the EPPM
Learning from Experience

Case Study 1: USA

Fear Control and Danger Control in Health Communication

Project Background:

This study explored the cognitive and emotional mechanisms underlying fear and danger control responses using the Extended Parallel Process Model (EPPM). In this study La Voie et al., (2017) test comparisons among the strengths of efficacy and threat appeals as well as the outcomes of threat. The focus was on health communication messages, particularly how they influence public responses and behaviours related to health threats.

Application of the Theory:

Researchers designed health messages that varied in perceived threat and efficacy. Participants were exposed to these messages, and their reactions were measured. High-threat messages highlighted the severe consequences of not adhering to health recommendations, while high-efficacy messages provided actionable steps to mitigate the threat.

Outcome:

The study found that:

- **High threat and high efficacy** messages led to danger control responses, where participants engaged in protective behaviours.
- **High threat and low efficacy messages** resulted in fear control responses, leading to message rejection and increased psychological reactance.

Lessons:

- EPPM effectively predicts behavioral responses to fear appeals in health communication.
- High efficacy is essential in mitigating fear control responses and promoting protective behaviors.

References:

Quick, B. L., LaVoie, N. R., Reynolds-Tylus, T., Martinez-Gonzalez, A., & Bos, N. (2018). Examining mechanisms underlying fear-control in the extended parallel process model. *Health Communication*, 33(9), 1161-1171.

[Link to Study](<https://www.tandfonline.com/doi/abs/10.1080/10410236.2016.1266738>)

Case Study 2: Europe -

Work Safety Conditions on Farms in Sweden

Project Background:

This study assessed the effectiveness of Sweden's approach to improving work safety on farms using emotional appeals guided by the EPPM. The focus was on motivating farmers to adopt better safety practices through targeted communication strategies.

Application of the Theory:

The study applied the EPPM to design and evaluate safety messages that combined various levels of threat and efficacy. High-threat messages emphasized the dangers of unsafe farming practices, while high-efficacy messages provided practical safety measures that farmers could implement.

Outcome:**The analysis revealed that:**

- **Messages with both high threat and high efficacy** were most effective in motivating farmers to improve safety conditions.
- **Low efficacy messages**, even if they presented a high threat, often led to avoidance behaviours rather than compliance.

Lessons:

- Effective safety communication must balance the presentation of threats with actionable and feasible solutions.
- Emotional appeals can significantly enhance message effectiveness when designed according to EPPM principles.

References:

Alwall Svennefelt, C., & Hunter, E. (2018). Evaluating the Swedish approach to motivating improved work safety conditions on farms: Insights from fear appeals and the extended parallel process model. *Journal of Agromedicine*, 23(4), 352-363.

[Link to Study](<https://www.tandfonline.com/doi/abs/10.1080/1059924X.2018.1501454>)

**Case Study 3: Asia
Haze-Related Content in Media****Project Background:**

This study explored the correlation between traditional and social media in framing haze-related content in Asia, using the agenda setting theory and the EPPM to understand how different media formats influenced public perception and behaviours regarding haze prevention.

Application of the Theory:

The EPPM was applied to analyze how traditional and social media platforms framed haze-related messages. The study compared the effectiveness of these messages in raising awareness and motivating preventive actions among the public.

Outcome:

Findings indicated that:

- Both media types were effective in raising awareness about haze risks.
- Messages that combined high threat with high efficacy were more successful in prompting protective actions, such as wearing masks and using air purifiers.
- In addition to perceived severity, collective self and response efficacy is critical in social media health communication. The aim is to motivate the public to adopt protective actions as well as to increase their perceived ability of environmental risk prevention.

Lessons:

- Media plays a critical role in shaping public responses to environmental risks.
- High-efficacy messages are crucial for effective risk communication, as they empower individuals to take action.

References:

Chen, L., Shi, J., Guo, Y., Wang, P., & Li, Y. (2019). Agenda-setting on traditional vs social media: An analysis of haze-related content grounded in the extended parallel process model. *Internet Research*, 29(5), 1130-1148.

[Link to Study](<https://www.emerald.com/insight/content/doi/10.1108/IntR-08-2017-0315/full/html>)

Case Study 4: Africa - Condom Attitudes and Risk Perceptions in South Africa

Project Background:

This study aimed to test the EPPM in the context of HIV prevention among South African youth, focusing on how attitudes towards condom use and risk perceptions were influenced by health communication messages.

Application of the Theory:

Researchers used the EPPM to design HIV prevention messages with varying levels of threat and efficacy. The effectiveness of these messages in changing condom use intentions and improving risk perceptions was measured among the target population.

Outcome:

The study found that:

- **High threat and high efficacy** messages significantly increased intentions to use condoms and improved perceptions of HIV risk.
- **Messages with high threat but low efficacy** led to fear control responses, where participants were more likely to avoid thinking about HIV risks.

Lessons:

- The EPPM is effective in designing messages that promote health-protective behaviours.
- Ensuring high efficacy in health messages is crucial for overcoming fear control and encouraging positive behavioural changes.

References:

Cheah, W. H. (2005). Condom attitudes and risk perceptions: A test of the extended parallel process model. *Journal of Intercultural Communication Research*, 34(3), 189-204.

[Link to Study](<https://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&auth-type=crawler&jrnl=17475759&AN=20247498>)

<https://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&auth-type=crawler&jrnl=17475759&AN=20247498>

Case Study 5: South America - Flu Shot Campaign in Brazil

Project Background:

This study aimed to evaluate the effectiveness of a flu vaccination campaign in Brazil using the EPPM. The campaign used the slogan "Fear the flu, not the flu shot" to encourage vaccination.

Application of the Theory:

The campaign messages were crafted based on EPPM principles, incorporating different levels of perceived threat and efficacy. Researchers measured the impact of these messages on participants' intentions to get vaccinated and their acceptance of the messages.

Outcome:

Results showed that:

- High threat and high efficacy messages were the most effective in increasing vaccination intentions and message acceptance.
- Low efficacy messages, regardless of the threat level, were less effective and sometimes led to fear control responses.

Lessons:

- EPPM can guide the development of effective health campaigns.
- Balancing threat and efficacy in health messages is essential for motivating desired behaviors.

References:

Roberto, A. J., Mongeau, P. A., & Liu, Y. (2019). Fear the flu, not the flu shot: A test of the Extended Parallel Process Model. *Journal of Health Communication*, 24(5), 497-507.

[Link to Study](<https://www.tandfonline.com/doi/abs/10.1080/10810730.2019.1673520>)



The Extended Parallel Processing Model provides a valuable framework for designing fear appeals that effectively motivate protective behaviours. By addressing perceived severity, susceptibility, response efficacy, and self-efficacy, communicators can create messages that not only raise awareness of threats but also empower individuals to take action. The successful application of the EPPM in health and humanitarian communication demonstrates its utility in promoting behaviour change and improving public health outcomes.

About the Author:

A Research, Media & Communication Consultant at GlutConsult. He believes in the ideology that to transform the world is not as important as making a difference. We have the opportunity to do so by starting with our own environments, and therefore, you and I have the moral responsibility to protect and promote the social and economic wellbeing of our communities so that the world we live in becomes a better place.

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July 2024

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