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## The Zoom Interference Model of New Media. A Metaphor-Based Dynamic Approach in the Jungle of Concepts

**Abstract.** The purpose of this paper is to establish an experimental model of new media using theoretical approach. After investigating numerous interpretations of new media, the paper offers a metaphor-based framework to guide you in the jungle of concepts. According to the hypothesis, the metaphor of interference supports the development of a theoretical model including the concepts of crossmedia, transmedia and intermedia. Therefore, the zooming interference model and its illustrating case studies are going to be available to interpret the dimensions of new media also with a visualized version. The model supports a dynamic approach to academic discussions and a software development to study the changing new media.

**Keywords:** zoom interference model; new media; atomic media; intermedia; crossmedia; transmedia

### Introduction

The new media landscape is quite complex. Investigating the terms, phrases and models, several interpretations are available in a dynamically changing media environment and with the growing number of academic sources.

The goal of this paper is to offer a metaphor-based, dynamic and simplified model of new media. After a short literature review of the concepts and buzzwords, the argumentation is going to feature a metaphor to develop model as a reference framework. The metaphor “interference” is going to provide a dynamic viewpoint with changing perspectives *via* zooming. A cross-, trans-, and intermedia-based model is going to be accessible to summarize the contemporary new media landscape. For a minimalist overview, visual illustrations are going to present the related new media patterns

and interpretative case studies are also going to be provided. The ultimate goal is to offer a metaphor-based dynamic model for further theoretical discussion and for software-based modelling.

### **Thesis 1: The term “new media” presents a jungle of changing concepts**

Studying the terms, models and theories with reference to the new media, a complex landscape is available with numerous approaches. According to the statistics by the highly quoted academic databases such as Scopus, EBSCO, JSTOR and Google Scholar, the number of publications are significantly growing year by year. Based on the summary of the Scopus, new media research is represented mostly in social science, humanities and art. Besides, scientists from the area of computer science and engineering are increasingly interested in this field due to the digital transformation. Considering these wide categories of disciplines with tens of thousands of publications per year, numerous concepts have become available. Additionally, this landscape is changing rapidly in line with the emerging digital trends (i.a. Lemon, Hoy 2018; Beck 2015; Holt, Sanson 2013; Finn 2012; Flew 2005). Therefore, the term of “new media” is acting as a magnet for a wide range of interpretations and concepts.

The foundation term is “mediatization” (i.a. Hepp, Hjarvard, Lundby 2015; Lundby 2014; Meyen, Thieroff, Strenger 2014; Kaempf 2013; Hjarvard 2013; 2008; Couldry 2008). It presents the core cultural-social symbols to transform them into media forms. The original was the “old” or “mass media”. It was followed by a digitalized version, the so-called “new media” presenting “pull media” to enable interaction and feedback (i.a. Geiss Leidecker, Roessing 2015). However, this approach has been extended in several ways in contrast with the previous form of “linear media” (i.a. Fortunati, O’Sullivan 2019; Siapera 2018).

Looking back, the history of new media started with keywords of “multimedia”, “hypermedia”, “polymedia” or “cyber space” (i.a. Miller 2018; Elleström 2010; Picard 2002; Cotton, Richard 1997; Rushkoff 1994; Heim 1993; Benedikt 1991) in the context of digital platforms and tools. Thereafter, the emerging technological trends forced to redefine new media by smart technology and artificial intelligence from automation to personalization (i.a. Fox 2016; O’Donnel, Falk, Konrath et al. 2014; Petruska, Vanderhoef 2014; Fehér 2014; Bacon et al. 2012; Huang et al. 2006). In the meantime, old “mainstream media” concepts are switching to online platforms, social media, prosumerism, and digital marketing which become major representatives of new media, just mentioning the mostly cited scopes from the last decade (i.a. Rosenbaum 2019; Grossberg 2016; Jarvis 2011; Lister et al. 2009). However, further diverse concepts have appeared, such as “non-homogenous”, “multi-layered”, “demand”, “disorder”, “temporary”, or “individual”, “vibrant”, “emerging”, “random”, “non-linear”, “user generated”, “enemy”, “next”, “future” or “after” media (i.a. Macey, Ryan, Springer 2014;

Quattrociocchi, Caldarelli, Scala 2014; Weiss 2014; Thakur, Summey, John 2013; Al-duán et al. 2012; Bennett, Kendall, McDougall 2011; Jacucci et al. 2010; Schreibman, Siemens, Unsworth 2007).

In parallel, the changing digital trends put pressure on the business and academic discussions to develop buzzwords describing the new media from vlog to the influencer culture (Sjöblom et al. 2019), producing a jungle of changing concepts at the same time. To say something novel about the contemporary media again and again constitutes a diverse landscape of new media understanding. The main goal of various concepts is to influence the discourses in business or academic debates to have further business opportunities or scientific citations.

To summarize the jungle of concepts, new media result in several approaches and become more extensive. Considering this evolution, two mainstream concepts have become remarkable. According to the first one, new media are spreading (Jenkins, Ford, Green 2013) and become ubiquitous (Carillo, Scornavacca, Za 2017) based on the digital services. According to the other approach, new media expand so intensively that they will disappear as an identifiable phenomenon and practice (Deuze 2016). In both concepts, new media deeply penetrate society and culture and become elusive. Moving forward to a workaround approach, the question is what is the most effective method to grab this complex and changing phenomenon.

## **Thesis 2: The diverse contemporary concepts of “new media” should be anchored by a metaphor first**

The new media shall never stop to be new, reformulating their own image constantly. In this case, the consequence is as simple as possible. If a permanent definition seems to be impossible to be found, a non-definition-based approach is required.

According to the deductive approach used in this paper, concepts of new media represent a too diverse landscape, hence, it cannot be summarized in a simple definition. According to the theoretical hypothesis, an alternative reflection would provide a simplified and comprehensive summary of the studied term. To step forward towards this reflection, it is useful to highlight the most popular approach of academic and professional discussions, namely the “convergence” model (Jenkins 2006). This valid model is intelligible and speaks for itself. Devices, platforms, genres, contents are converging constantly. However, divergence is also triggering the new media by new trends, tools, platforms and applications (Fehér 2013). Considering these concepts, a dynamic landscape of the new media is highlighted.

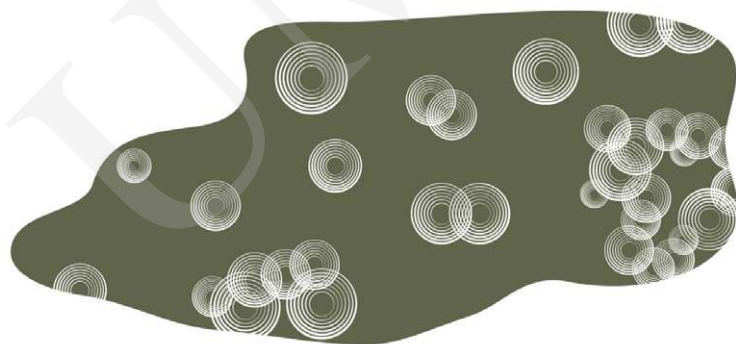
The detailed hypothesis to this approach is focusing on a non-definition-based, dynamic output. Metaphors are capable to summarize complex and changing trends emphasizing various dimensions of the same phenomenon (Gibbs 2008). Therefore, with an extended hypothesis, a metaphor would be a driver to a com-

prehensive and simplified model of the studied term. These steps support a theoretical summary of diverse landscape of new media *via* a dynamic model and with a minimalist design.

### Thesis 3: The metaphor of “interference” provides a dynamic new media model

Based on the above explained hypothesis, a synthetic metaphor allows to understand the dynamics of new media. Focusing on the contemporary media as their spreadable, ubiquitous, convergent and divergent movements, diverse media phenomena interact and resonate with each other. This flexible fluid media are capable to flow like the water where changes and movements become visible. Based on this simile, a pond would be imaginable. If something is dropped to inside, interference will be visible. In case of more parallel drops, interferences will meet with each other or will have separate movements (Figure 1).

Figure 1. The metaphor of interference



Source: Author's own study.

This illustration provides a simple way for a bird's eye view to the interfering circles which would be remixed generating further vibrations. The circles produce individual and temporary characteristics with non-linear movements to constitute a dynamically changing overall image. Each of the circles can be convergent *via* interfering waves and a number of them may get into interactions with other circles. However, two or more circles can meet in various ways and with different results. It depends on the motions and the intensity of the waves. The two outputs are constructive and destructive. In case of the constructive impact, the waves are reinforcing while in case of the destructive version waves erase each other. In terms of the original subject, some of the phenomena of new media disappear while others become intensified.

Personal and institutional users drop things to the virtual pond of this potential new media that also include their audiences. Buzzwords, storylines, viral effects, spreading memes and further phenomena of new media represent these drops. The waves either meet or do not meet temporarily with different levels of intensity and motion. Some waves have contact with waterside boundaries as an object edge that modifies the pattern in different ways. Options would be constructive and destructive in this case.

To sum up, the metaphor of interference resonates with regular perception and provides a bird's eye view of a dynamic new media. It also resonates with immersion in digital-virtual experience (Lister et al. 2009) where different media formats meet. Based on the interference metaphor, the cited convergence-divergence dichotomy is going to be revealed in the next chapters by observed new media phenomena.

#### **Thesis 4: A zoom interference model features the diverse landscape of new media**

The metaphor of interference provides a dynamic and integrative perspective of new media. Following this basic metaphor and bearing the original purpose in mind, solely a simplified understanding of new media is in focus.

Emphasizing again, this paper does not aim to discover all the processes and phenomena within the new media. It is not concerned with details of the frameworks of media, the impact of the media or with other points under consideration. The goal is only a close reading of new media to develop a framework model based on the proposed metaphor. Having a bird's eye view above the hypothetical pond by the metaphor of interference, there is available an observation view of a complex flow. From this perspective, the metaphor of the time-determined dynamics could be supplemented with another aspect of the dynamics. This is the method of *zoom* to observe the media operation closer and further. The dimensions of zooming promote the understanding of the existence or lack of connections to different phenomena of new media.

#### **Atomic media**

Starting with the first and closest zoom, the basic form of new media becomes visible. This consists of interfering circles resulting in interference on surface of the water. This core media phenomenon is the *atomic media* (Figure 2). Atomic media as basic representative of media phenomena are working in themselves without any direct interaction with other atomic parts of the new media. The atomic new media contain digital data collections to represent a significance, and also, hold hidden metadata for

digital services regularly without human perception but only to feed algorithms. The atomic new media is just present something, such as a photo on a screen to be visible. It gives an opportunity to create only a potential to interfere with other atomic new media.

Figure 2. Atomic media without interaction

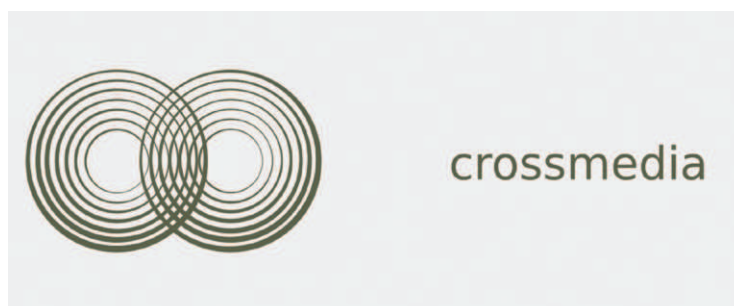


Source: Author's own study.

### Crossmedia

If the atomic media interact with another set of atomic media, *crossmedia* (see: Figure 3) are produced. With this zooming out on the landscape of new media, there is the focus on intersections, interference, interactions and their constructive and destructive dynamics.

Figure 3. Crossmedia in interaction



Source: Author's own study.

Crossmedia (Ibrus, Scolari 2012; Enoch, Johnson 2010) goes beyond the atomic version to formulate a new nature. The result is a temporary phenomenon having a potential for interactivity with various forms.

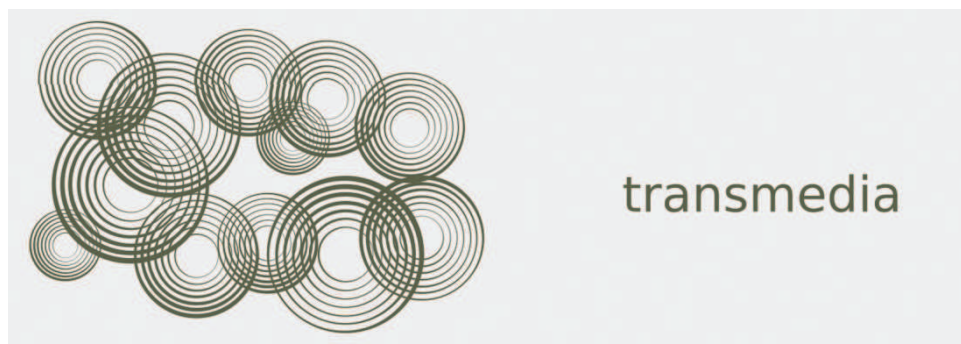
Presenting a specific case for it, advertising holds a visible interference on video sharing platforms if a static banner produces an interaction with a parallel audiovisual content. Normally, the videos are on the one side and the banners on the other side of a landing page. The two sets usually contain completely different contents, brands, messages. However, a video-based advertisement rarely presents options for various outcomes in the storyline. If a user finds a relevant option to interact with the storyline finding the connection between the video and the banner, crossmedia becomes available. This message intersection supports guided media consumption to promote targeted offers. The interfered new media concept triggers a more intensive message structure to involve the users (Harries 2002). The customer journey (Visuri, Hosio, Ferreira 2017) through the interactive media resonance engages the customers in a storyline.

An additional example is the second screen phenomenon (Zuniga, de Garcia-Perdomo, McGregor 2015). In this case, an audience follows a streaming on one screen, such as a television, and also, on another one, like a smart phone to get access to supplementary contents at the same time. The result is the crossmedia in the customer journey finding connections and interactions between new media contents to produce further media consumption or lack of it. In case of constructive activity, a platform supports one another, while in case of the destructive way, one of the screens can block the other one from the flow process. The crossmedia smuggle different meanings *via* interaction. The first media content is coming with the other one.

## Transmedia

Zooming out from the landscape of new media pond, *transmedia* requires the widest-angle lens (Figure 4). Transmedia contribute to the creation of a new world resulting in complex networks of meanings and symbols via various atomic and crossmedia.

Figure 4. Transmedia to create own world



Source: Author's own study.



The most well-known case of transmedia is a movie or a video series with extensions by further productions of professional or user-generated contents (i.a. Abba 2009; Jenkins 2010). Transmedia have two versions in this context. In the first case, it presents classic static versions such as animation or cartoon adapting the original movie in a professional or amateur way. The second version implies a dynamic content workflow by a wider audience or fun based on the original content or storyline. Both of them are available in most of the cases together. Target audiences and professional productions present different genres, outputs and alternative interpretations to interact with each other by dedicated platforms, applications, social media and further digital tools. Members of the audience decide about their participation, interaction or collaboration (Siapera 2018; Duffy 2015).

Transmedia provide transitive, productive, spreadable, and layered meanings with extensive interpretation of the original sources resulting in a reflection or convergence of culture (i.a. Jenkins 2006; Hay, Couldry 2011). The created networks of contents, genres, narratives and social sharing operate with an ongoing interactivity to build a world with concepts, meanings and symbols to identify a transmedia phenomenon. One of the first identified examples was the blockbuster movie entitled *Matrix* with wide extension of transmedia storytelling *via* comics, animation, social media contents and video games in fun networks (Jenkins 2006).

It is necessary to highlight that not all aspects of atomic or cross media are available for the whole audience of transmedia. Everybody follows different content networks. Interest, search history, personalised contents and genres determine a filter bubble for the users producing various viewpoints, and isolated cultural or ideological bubbles (Pariser 2012). Consequently, only smaller slices of transmedia are available for an average user and a big picture is visible only for a systematic analysis or research.

## Intermedia

Last but not least, a specific zoom finds borders of the pond according to the metaphor. In this case the pattern of the interference is broken down by an alternative way, namely without an interference with another atomic or crossmedia. An interaction belongs to non-media phenomenon in the culture or society (Figure 5).

The term “intermedia” (i.a. Elleströmm 2010) stems from the art history. Originally, it referred to a mixed form of representations, just like Dadaism or Surrealism. The advent of intermedia was the readymade in the sixties when an object represented itself in an age of mass production. In the media context, TV-Buddha emphasized the mediatized trends by Nam June Paik in 1974 (<http://www.paikstudios.com>) when a Buddha statue watched his subsequent videotaped image on the TV screen *via* closed-circuit camera.



Figure 5. Intermedia for interpretation



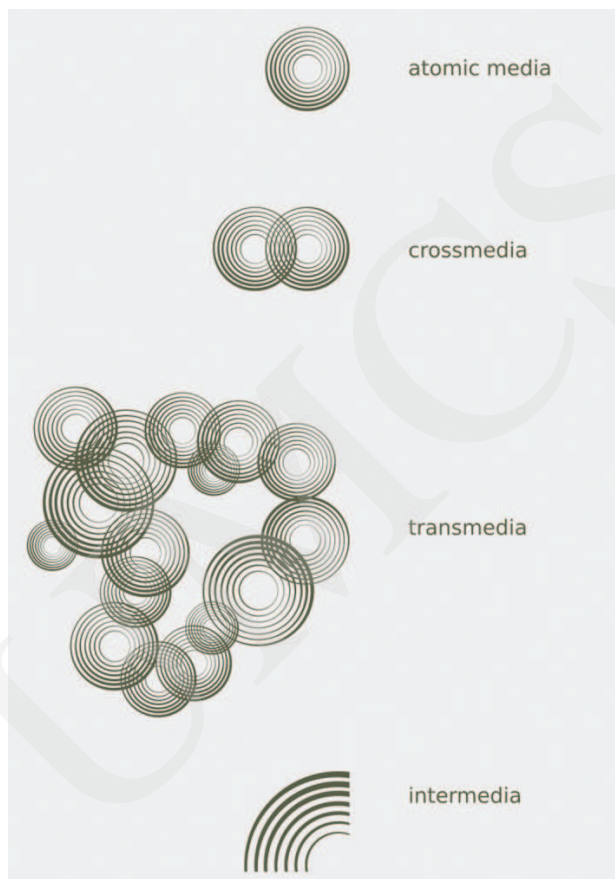
Source: Author's own study.

Thereafter, computer graphics and animations, video games, virtualization, augmentation, robotics and artificial intelligence have required feedbacks for changing new media environments. For instance, the telegarden project (1995–2004, <https://goldberg.berkeley.edu/garden/Ars/>) was a definitely powerful reflection on the formerly fancy virtual gardens as social media gaming. The artistic installation allowed users to view and to interact with a garden. This garden was filled with soil and living plants and users could remotely build it with an industrial robot to cultivate a real garden as an online gardening game. The results appeared on the screen for monitoring. In case of improper gardening, users killed the living plants which was a real consequence compared to the pixel-based dead plants in online gardens. The project was a reflection on responsibility to highlight the difference between the physical objects and their representations on the digital screens.

Further contemporary cases are available by smart technology and artificial intelligence. The big data-based machine learning have opened the gate for computers to produce music, literature or videos with or without human participation. Several questions are involved in these versions of new media from copyright to the creativity. Giving an example for intermedia, the Camera Restricta is a speculative camera design that will not allow you to take photos of heavily photographed places if too many have already been taken by others at that location and posted in social media (e.g. the Eiffel Tower, Times Square). Additionally, a redesigned smartphone and its automated GPS-based application identify the cliché suspicious photos to ignore taking a photo. The goal is to allow users to produce non-mainstream or divergent content as a contemporary art project (Schmitt 2015). Consequently, intermedia confront the mainstream trends and tighten their boundaries *via* thought-provoking feedback. Intermedia also formulate creative, moral, aesthetic questions of new media to reveal the non-familiar forms of representations (Press, Williams 2010). It results in experimental and extended phenomenon of media *via* out-of-box thinking.

In summary, a dynamic model of new media has become available *via* the metaphorical approach and with different zooms from atomic media to media-reflexive extensions (Figure 6).

Figure 6. The model of dynamic interference with options of zoom



Source: Author's own study.

*The zoom interference model* provides dynamic viewpoints in rapidly changing new media environments. It gives an opportunity to cluster the convergent and diverse new media trends. Besides, this model promotes a complex and simplified framework of new media on the above summarized way. Considering the resulting model, the lesson is to force an inquiry to analyze a part of the big picture and *vice versa*.

## Conclusions and recommendation

To sum up, the feature of the term “new media” was a relevant focus on contemporary media. The paper summarized an overview of the concepts with historical and contemporary aspects. Focusing solely on the phenomena of new media and their

dynamics *via* a theoretical approach, a bird's eye view have become available. The metaphor of constructive-destructive interference illustrated the work of new media to support a model development. The time dimension of the illustration emphasized the ongoing change and the zooming provided understanding of the workflow of new media cases. Presentation by atomic media, interaction by crossmedia, creation of a complex content network by transmedia and provocation by intermedia in one model allow theoretical and comprehensive analysis for further studies without facing a jungle of new media concepts. The research limit is a lack of new media definition as a conclusion. However, beyond the labels of "digital", "interactive" and numerous further options, definitions would be continuously reformulated following the upcoming trends. Besides, definitions, labels or buzzwords are updated by both of the above-mentioned scenarios as ubiquitous or disappearing new media based on the resulted dynamic model.

The next step might be a software to create model in order to visualize the above outlined dynamics of the new media with zoom options and timelines. Through big data and machine learning it is possible to study the changing trends and to find emerging cases. Consequently, a predictive model would contribute to the techno-cultural research from computer science to digital humanities.

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