13. Covid-19: Narrative Engine and Characters Embedding

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ABSTRACT

This study delves into the narrative dynamics of medical drama TV series, focusing on the representation and impact of the Covid-19 theme. Drawing on the framework proposed by Rocchi and Pescatore (2022), the research examines the incorporation of themes within character-driven storylines. Through a quantitative content analysis, the Covid-19 theme is analyzed as a central narrative element, with sub-themes representing its diverse manifestations. Guided by two research inquiries, the quantification of the prominence of the Covid-19 theme and the correlation between the Covid-19 and main narrative isotopies (sentimental, professional, and medical cases plot), this study employs the novel concept of "narrative biomass" to assess thematic integration.

KEYWORDS

Medical drama; TV series; Covid-19; quantitative content analysis; thematic analysis.

Introduction

Medical dramas TV series have long been a popular genre in television, captivating audiences with their compelling portrayals of medical professionals and the intense scenarios they encounter in healthcare settings. Set in hospitals or health facilities, these fictional products intertwine medical cases with the personal and professional lives of the characters, creating engaging storylines filled with human drama, ethical dilemmas, and life-or-death decisions. As a result, medical dramas not only entertain but also provide a unique window into the complexities and challenges faced by healthcare practitioners.

As for the genre, it is possible to identify different features also of seriality more generally, which motivate the formulation of the following hypotheses:

1. Broadcast TV series are permeable and open, which means they are able to absorb elements of the reality and rework them inside the narration.
2. Medical drama narrative structure allows and endorses the introduction of a rather large number of characters (Pescatore e Rocchi 2019), patients, who consequently appear for one or two episodes, or members of the medical staff, therefore more present in the narrative.
3. In addition to the aforementioned matter about characters, central feature of the long seriality is the continuous introduction of new narrative elements on a repetitive structure (Eco 1984).
4. Furthermore, the medical drama is a genre that has a strong pedagogical and educational impact and intent both when it concerns professionals (Williams et al. 2015, Baños et al. 2019, Terry and Peck 2019) and the public (Movius et al. 2007, Hether et al. 2008, Asbeek et al. 2015, Alismail 2018). Despite this, social issues represented in TV series of this genre have rarely been investigated in literature, with exceptions such as the theme of abortion (Sisson and Kimport 2017, Herold and Sisson 2020), the depiction of African Americans (McQueeney 2022) or opioids addiction (Wistrand 2017).

This chapter is part of the wider PRIN research project *Narrative Ecosystem*

Analysis and Development Framework (NEAD Framework). A Systemic Approach to Contemporary Serial Product. The Medical Drama Case. In particular, we took as starting point to the work of Rocchi and Pescatore published in 2022. They investigated the storytelling evolution of eight medical dramas by identifying three main narrative isotopies: professional, sentimental and medical cases plot, showing the strength of the medical genre and its ability to rebuild, in its microcosm, the human macrocosm, where random everyday life elements mix and overlap with working and social relationships. They proved that the three isotopies are good descriptors for the medical drama genre, measured their narrative biomass and identified four possible narrative profiles: the soap formula, the anthology formula, the doctor and patients' formula, and the social formula.

From these assumptions arose a research project with a threefold objective: identify and define the main social themes in medical products, quantify their narrative presence and demonstrate their ability to generate narrative arcs involving characters. At this stage of research 10 themes have been identified: Covid, Racism, Eating Disorders, Abortion, Mental Health, Opioids Addiction, Gender-based Violence, Mass Shootings, LGBTQIA+ community and Climate Change. For this contribution the focus is on the theme of Covid-19, previously analyzed in several works both from a narrative (Cambra-Badii et al. 2022, Possenti and Serra 2021), productive and consumption point of view (Boursier et al. 2021, Degli Esposti et al. 2021, Sigre-Leirós 2022).

This contribution is only the first step of the wider work on the themes, therefore the aims are to:

- Mention the theoretical frame of reference and give a first definition of the theme.
- Illustrate the protocol used to quantify the presence of Covid theme and its declinations.
- Track the presence of characters, operation that will be useful for the next steps.

Definition of Theme and Characters Embedding: Covid Case Study

The first step of the analysis is to identify the definition of the theme, starting from a semantic fundamental dichotomy: figurative level/ thematic level. Figurativeness "gives rise to gradual manifestations, depending on the use that the discourse makes" (Bertrand 2007). However, for this level to be

understood by the user, the thematic level is necessary: the theme, in fact, gives meaning and value to the figures (Bertrand 2007).

The notion of theme can also be meant in this context as a configuration, "a kind of micro-story with an autonomous syntactic-semantic organization and capable of being integrated into wider discursive units" (Greimas and Courtes 2007).[1] Greimas (1984) identifies two levels in the narrative object, the narrative and the discursive, which, though parallel, are distinct. Both serve to understand the paths that the subject faces: while the narrative program, constituted by actantial roles, can be identified as one level, the trajectory outlined by configurations exists on another level. The former, to some extent, forms the basis of the narration, while the latter contains the multiple realizations that the narrative program can have (Greimas refers to this as a *discursive dictionary*, understood as a stock of themes and motifs) (Greimas 1984). In other words, the configuration allows for permanence of a specific theme in the text through various articulations. Just as the Greimasian configuration "incorporates all the figures [...] that can associate"[2] (Greimas 1984) the configuration in our research will constitute a theme capable of encompassing the diverse articulations it can associate. However, there is a significant difference between the traditional narrative model identified by Greimas and the serial model proposed by us: in the former case, the configurations encompassing different figures are integrated into the pre-established narrative path, whereas in the latter case, they become the narrative engine and generate the narrations. Following this reasoning, it is as if the process is reversed: in the traditional model, an abstract level is given first and then a more concrete one, whereas in the serial model, the abstract can be deduced from the concrete. In the case of Covid, for example, having a configuration of this type implying a series of realizations (which we will later see as *sub-codes*) results in the generation of a series of different narratives that we could define as a narrative path. As for the TV series, or rather the Narrative Ecosystems, the theme takes on a narrative role: the hypothesis behind the research project is that not only the themes are able to generate narrative arcs, but that they perform this action by entering the characters and producing an embedding.

From a textual point of view, in this context, Covid will be referred to as isotopy. Indeed, with reference to this case study it is possible to talk about

1 My translation.

2 My translation.

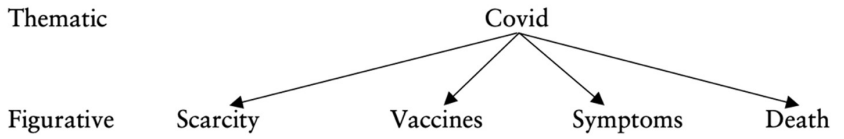

Figure 1
Distinction between thematic and figurative level applied to the Covid case study.

thematic and figurative isotopies: (I) the Covid theme can be considered the thematic isotopy, located at a deeper and more abstract level, which is responsible for subjecting the figurative elements to place them in relation to each other; (II) to this last isotopy correspond several sub-themes that can be defined as figurative isotopies, declined in a more concrete way (Greimas and Courtes 2007).

The Covid isotopy is found in the text through the actualization of different situations: the symptoms of patients and professionals, the scarcity of medical materials, the change in human relations due to the pandemic. These elements, which are defined as sub-themes or figurative isotopies, are identified in the analysis process as sub-codes described in the Methodology section. In a more practical perspective, in this analysis we refer to the term isotopy in a narrative sense, so its meaning will be analogous to that of the term general plot.

In summary, on the one hand we will have a more general plot, the Covid one, and on the other more specific subplots, such as the scarcity of medical material, the symptoms of professionals and patients, or in other words the declinations through which the theme is manifested. The important point to note is that they are considered part of the theme, and of its relative manifestations, the only elements that contribute to its narrative development.

Finally, at this stage of research, character embedding has been loosely formulated as a hypothesis. For this reason, during the analysis of the material we will proceed with the annotation of the characters, but the results will not be processed.

This contribution is then guided by two main research questions:

RQ1: Is it possible to quantify the narrative biomass of Covid isotopy?

In the ecological field, the word *biomass* typically refers to the total mass of living organisms within a given area or ecosystem. Then, translating the term into serial context, it can be understood as the

collective body of narratives, stories, characters and storytelling elements that exist within a specific narrative ecosystem. Quantifying the narrative biomass of Covid, consists in the estimated measurement of isotopy within the narrative development and in the identification of its declinations.

RQ2: Is it possible to quantitatively correlate the Covid isotopy with the main narrative isotopies?[3]

The goal is to demonstrate how the Covid theme is distributed on the main narrative lines and obtain formulas that describe the different declinations of the theme. A first hypothesis is that the pandemic, according to the TV series considered, could be represented in a pathetic (sentimental plot), professional (professional plot) or environmental (medical cases plot) key.

Corpus

The corpus was selected considering the seasons dealing with Covid and its effects from four medical TV series of the USA prime-time: *Chicago Med* (NBC, 2015-), *Grey's Anatomy* (ABC, 2005-), *New Amsterdam* (NBC, 2018-), *The Good Doctor* (ABC, 2017-). The series have some elements in common that motivate the choice: (I) all pertain medical genre, (II) all belong to the USA prime-time, (III) they are different products in narrative terms so allow to grasp the different declinations of the theme. To conduct the quantitative content analysis, a dataset with the related codes was first built (Table 1).

Within the selected corpus, we then proceed with a distinction between episodes that represent events that take place in the middle of a pandemic and those that are set after the vaccines administration, period in which measures are still taken in order to contain Coronavirus and there are explicit references to the pandemic. The episodes of *Chicago Med* included in the corpus take place almost all in the height of the pandemic in which Covid departments are still active and the doses of vaccine are still to be distributed, event that occurs in episode 06x05. In the TV series *New Amsterdam* only the first minutes of episode 03x01 are devoted to the narrative of the emergency, so the episodes of the third season will be entirely placed in

[3] Pescatore and Rocchi (2019) identified three narrative isotopies: sentimental and professional plot, belonging to the running plot, and medical cases plot, belonging to the anthology one.

TV series	Initials	Pandemic	Post Pandemic
Chicago Med	CM	06x01 "When Did We Begin to Change?" 06x02 "Those Things Hidden In Plain Sight" 06x03 "Do You Know the Way Home" 06x04 "In Search for Forgiveness, Not Permission"	06x05 "When Your Hearth Rules Your Head"
Grey's Anatomy	GA	17x01 "All Tomorrow's Parties" 17x02 "The Center Won't Hold" 17x03 "My Happy Ending" 17x04 "You'll Never Walk Alone" 17x05 "Fight the Power" 17x06 "No Time for Despair" 17x07 "Helplessly Hoping" 17x08 "It's All Too Much" 17x09 "In My Life" 17x10 "Breathe" 17x11 "Sorry Doesn't Always Make It Right" 17x12 "Sign O' the Times" 17x13 "Good as Hell" 17x14 "Look Up Child" 17x15 "Tradition" 17x16 "I'm Still Standing" 17x17 "Someone Saved My Life Tonight"	
New Amsterdam	NA		03x01 "The New Normal" 03x02 "Essential Workers" 03x03 "Safe Enough" 03x07 "The Legend of Howie Cournemeyer" 03x09 "Disconnected"
The Good Doctor	TGD	04x01 "Frontline: Part 1" 04x02 "Frontline: Part 2"	04x03 "Newbies" 04x06 "Lim" 04x09 "Irresponsible Salad Bar Practices"
TOTAL		**23 episodes**	**9 episodes**

Table 1
Corpus TV series, related codes and distinction between Pandemic and Post Pandemic episodes.

the "Post Pandemic" category. Unlike the other products mentioned, *Grey's Anatomy* has dedicated an entire season (S17) to pandemic, focusing mainly on the character of Meredith Grey. The first two episodes of the fourth season of *The Good Doctor* fully fall into the category "Pandemic" and describe the work in front line during the emergency. A speech by actor Freddie Highmore in the third episode announces the end of the pandemic, even though residual elements have subsequently appeared.

Quantitative Content Analysis: Coding Covid-19 Isotopy

The methodology chosen is quantitative content analysis, widely used in the context of media (Alexopoulos, Gamble 2022, Barker et al. 2020, Chapoton et al. 2020, Sink and Mastro 2017). This methodology allows a large number of data to be collected, indexed and mapped, and then reduced and interpreted (Elliott 2018). Indeed, as far as audiovisual products are concerned, the material often includes high playing time that is difficult to analyse in other ways. Moreover, it is good to note that in quantitative analysis, the collection of the dataset is only the first step: it is fundamental, then, the interpretation of the corpus and the elaboration of data-driven theories.

The working field on which the analysis will be conducted is an Excel sheet, where the different data to be collected will be reported.

STAGE 1. Code and sub-codes definition. The analysis starts from the notion of code, defined as "labels that assign symbolic meaning to the descriptive or inferential information compiled during a study" (Miles et al. 2014: 71) or as "symbolically assigns a summative, salient, essence-capturing and/or evocative attribute for a portion of language-based or visual data" (Saldaña 2014: 4). The coding process that has been carried out is an emergent coding, so data collection has started without a pre-specified set of codes. Indeed, if the main code (Covid) was immediately identified, the sub-codes were detected throughout the viewing of the product, partly relying on material already published (Baños et al. 2022). The reason is to be traced in the fact that, despite some of the situations attributable to Covid are intuitive and similar in all products, some declinations of the theme are unique.

Sub-theme	Sub-code	Example
Covid protocols	C1	Triage
Covid effects on mental health	C2	Mental breakdown
Symptoms of professionals or patients	C3	Cough
Scarcity of medical supplies	C4	Lack of meidicines or masks
Death of professionals or patients	C5	Cardiomiopathy
Human relationships modified by Covid	C6	Videocall
Vaccines	C7	No vax
Impact of Covid on the hospital system	C8	Promotions

Table 2
List of COVID sub-themes, related sub-codes and examples.

The following sub-codes[4] emerged from the selected episodes (Table 2).

The first subcode is the most generic one and refers to all protocols put in place to contain the virus and standardize procedures in the hospital, then triage before entering the emergency room, the distribution of protection devices to medical personnel, and the administration of swabs. The second (C2) takes into consideration all the consequences that the pandemic has had on the mental health of both doctors and patients: mental collapse after the death of a patient, PTSD, and problems in returning to post-Covid normality. Subcode C3 covers the more strictly medical aspects, in particular contagion, virus symptoms or healing. The other subcode related to the disease itself is C5 which refers to the death of professionals and sufferers both due to direct symptoms of the virus, such as lung failure, and indirect ones from long Covid. In addition to these, also the subcode of vaccines (C7) is part of the medical sphere and includes discussions on vaccines, cases of non-vax people or vaccination campaigns. All cases of the scarcity of medical supplies, such as the lack of masks or tampons, but also the difficult finding of drugs, fall under sub-code C4. More related to the sentimental aspects is C6, the subcode of human relationships modified by Covid, i.e. video calls, love stories that become long-distance, and problems in contact with other people. As for the professional sphere, the consequences of the pandemic, both career advancements, redundancies, and transfers, have emerged.

[4] In this context, we will refer to the terms "sub-themes" and "sub-codes" as synonyms since the former represent the manifestations of Covid in full, while the latter are a simplification to facilitate the writing of the chapter.

Exclusion Criteria

Some elements will not be classified through Covid isotopy for two concurrent reasons: (I) when an element integrates into the environment, but does not contribute to its development, it cannot be counted among the isotopy declinations; (II) the theme is not made explicit and consequently has a marginal narrative impact, if not absent.

Here are some examples:

- Masks as a simple protective device in post-pandemic episodes. If there is a segment where two doctors are in the emergency room and are still required to wear masks, but they are dealing with a medical case involving a firearm victim who has nothing to do with Covid, it will not be classified.
- Routine Covid tests before admission to the emergency room even after the pandemic. If a segment sees a patient go to the hospital for suspected diabetes and before being admitted is declared negativity to the Covid test, it will not be classified.
- Word "pandemic" as a mere temporal reference. If a segment includes a conversation between two doctors, which refers to the pandemic as a period of time without it giving rise to a speech on Covid, it will not be classified.

STAGE 2. Units of analysis. The first step of this protocol foresees the definition of the units of analysis that will be classified, in a second moment, through the sub-codes of the Covid theme. Considering the second research question that involves the attempt to correlate the Covid isotopy to the main isotopies, it was considered appropriate to use the dataset collected by Rocchi and Pescatore in the wider framework of research on Narrative Ecosystems (2022). The two scholars defined as units of analysis, which they call segment, "a specific portion of the audiovisual product that is characterized both by space-time-action continuity and invariance in the thematic narrative elements (i.e., isotopies)" (Pescatore and Rocchi 2022). The method involves the breakdown of the narrative material manually determining the start and end time of each segment and, therefore, its extremes must be reported in the columns reserved for playtime. Each segment must then be assigned a code (professional plot, sentimental plot or medical cases plot) and each of them can be assigned a value (weight) between 1 and 6. The ideal situation sees a portion of video assigned to a single code, but in

practical research we are often faced with segments that see an overlap of codes. This procedure allows to obtain two results: (I) to correctly identify the narrative biomass of Covid, (II) to make the comparison between Covid isotopy and main isotopies using the same units of measurement.

STAGE 3. Character record. In this phase of the research, the character record is useful to identify the entry point of the selected theme. In a wider framework, marking the character can allow the researcher to verify the narrative arcs that the theme is able to generate. As we previously mentioned, the data will be reported in an Excel sheet: therefore, in the column "Character" the name of the character present on screen and involved in the theme must be noted.

Three types of character have been identified:

1. Main character. It is to be considered as belonging to this category every recurring character who has a strong importance within the narrative (e.g., doctors protagonists);
2. Recurrent character. This category includes characters who appears from time to time during the series' run: in some cases, they appear for one or a few episodes, in others even during multiple seasons (e.g., doctor who appears in a few episodes, partner of one of the doctors);
3. Guest. The characters in the episode cases belong to this group.

If there are two or more characters, they must be marked in different columns to facilitate analysis.

Here two examples:

- If only Max Goodwin is on stage, the character's name will be marked in the first column.
- If the scene sees a dialogue between Max Goodwin and Iggie Frome, the first name in the first column and the second one in the next column will be marked.
- When the segment is not about the theme, the character does not have to be marked and therefore it will be enough to enter a 0.

STAGE 4. Attribution of code and value. Based on the segments previously assigned to the three main isotopies (professional, sentimental and medical cases plot), one or more sub-codes of the Covid isotopy (code) should be assigned. For the assignment, you will have 8 columns of the sub-codes

illustrated in Table 2: Covid protocols (C1), Covid effects on mental health (C2), Symptoms of professionals or patients (C3) Scarcity of medical supplies (C4), Death of professionals or patients (C5), Human relationships modified by Covid (C6), Vaccines (C7) and Impact of Covid on the hospital system (C8). The segment will then be assigned to the sub-code whose theme is closer to the events represented. In some units of analysis, the subthemes present could be more than one: in this case, there will be an overlap of sub-codes.

To assign the sub-code, it is necessary to give a value to each segment. The first issue concerns how value should be assigned considering two aspects: the narrative development and time. First, the researcher should assess how much the segment contributes to the syntagmatic development of the Covid theme. In addition to this, the researcher should evaluate the time devoted to the topic within the segment. In fact, if time can usually be considered a valid indicator, not in all cases it is exhaustive. The range of values goes from 0, when the theme completely absent, to 6,[5] when it is strongly relevant in narrative terms.

The maximum value is therefore equal to 6, but the Covid isotopy is not necessarily exhaustive, unlike the others, and therefore a total value less than 6 can be assigned. This is because it is not said that the entire playtime of the segment is dedicated to the theme. In fact, the residual value (if any) must be recorded in a separate column, called "NT".[6] When overlaps occur, the value must be distributed among the different sub-codes involved.

Here two examples:

- Death of a patient because of Covid. If during the episode the course of a patient's pathology is followed and the segment (60s) showing his death arrives, during which, for example, doctors try to revive him and relatives cry on video call, it will have a value of 6.
- Debate on the future of a relationship. If two doctors talk about their relationship and, among the problems, they mention the difficulties dictated by the pandemic, the segment in which the situation occurs (60 s) then will be worth 2.

[5] This range of values has been chosen to make the analysis of the Covid isotopy homogeneous to that of the other isotopies.

[6] In the context of broader research on themes as narrative engine, the "Non-Thematic" also includes overlaps with other topics, such as abortion, racism, eating disorders etc.

STAGE 5. Conversion of value in time. The conversion of the value in weighed time serves to reach two goals: calculate the time dedicated to each sub-code and the time dedicated to the Covid code. Thereby to proceed with the first purpose, values from 0 to 6 assigned to sub-codes must be converted in time. The latter is obtained by putting in proportion the value of one or more sub-codes with the time of the segment. Instead, if the focus is on the theme in its entirety, before proceeding with the proportion the values distributed on more sub-codes will have to be added. From this data, it is then possible to obtain the time of Covid isotopy and its sub-codes in each episode (and season) and compare it with the non-thematic material.

STAGE 6. Correlation of Covid isotopy with main plots. At this stage, the weighed time of segments dedicated to Covid will already be known after applying the proportion. Through a second proportion it is then possible to quantify the time of the individual segments devoted to Covid distributed on the value of the isotopies. Finally, we proceed with the addition of the time of the Covid isotopies distributed on the other isotopies within the single episode and then the entire season.

The last step of the work involves the identification of narrative formulas that can qualitatively describe how the Covid theme is depicted within the series under examination. As mentioned in the introduction, it can be assumed that the representation can be in a pathetic, professional or environmental key. In the first case, the theme will be mainly related to the sentimental plot of the series: will then be shown more the relationships modified by the virus, any loss of the main characters, moments of personal crisis. If the professional plot prevails, the formula will be professional and consequently there will be more emergency situations in the hospital, promotions or dismissals due to the pandemic, but also systemic difficulties in finding drugs. Finally, the environmental formula will be that in which the Covid theme is mainly based on the isotopy of medical cases. In this case will be more frequent scenes showing the actual pathology, operations on positive patients, intubations, cases of long covid.

Results

Covid Biomass: Covid Time on Total Time and Declinations of Subthemes Time

The first results to be evaluated are those of the time devoted to Covid isotopy on the total playtime of the episodes taken into account. As you can see in the chart below (Figure 2), in *Chicago Med* the Covid time in percentage is about 19%. More generally, this number is justified by the fact that, although the hospital management of the pandemic is represented (e.g., covid ward, remote medical visits), other narrative lines are simultaneously present: numerous medical cases, Dr. Hannah having a withdrawal crisis and the opening a new medical trial. As emerges from the coding, the first episode (06x01 "When Did We Begin to Change?") is the one with a higher percentage, precisely because the theme is introduced and contextualized. The negative peak is instead in the 6x03 "Do You Know the Way Home": the nurse Sexton is transferred from the Covid ward to the emergency room because of an incoming mental breakdown, Dr. Halsted is in the middle of trial management so he needs to find new patients, and Nathalie and Crockett are working on a case involving a kidnapped patient.

In *Grey's Anatomy* the percentage of Covid isotopy is a bit higher for a total of about 32%. The high value is mainly due to two factors: on the one hand, the whole season is dedicated to the theme and follows the course of the pandemic from emergency to return to normality; on the other the theme enters and is developed through some main characters, among which Meredith Grey and in minor part Tom Koracick and Miranda Bailey. The negative peaks are episodes 17x09 "In My Life" and 17x14 "Look Up Child" because the theme is almost absent: in fact, they are both filler episodes in which the personal stories of Teddy Altman (her past, her current PTSD after the death of De Luca and her relationship with Hunt) and Jackson Avery (his professional future and the relationship with his father) are deepened. The first positive peak is in episode 17x05 "Fight the Power" in which several characters are involved:

- Meredith Grey. In the previous episode Meredith has entered a state of unconsciousness and her symptoms have worsen.
- Tom Koracick. He is now positive at Covid and hospitalized and his health is improving.
- Miranda Bailey. Miranda learns that, after her mother tested positive

for Covid, she must be hospitalized. Her condition is so severe that a little later she will die because of the virus.

The second peak is at the following episode (17x06 "No Time for Despair") and involves the same characters:

- Miranda Bailey. She is facing the psychological consequences of his mother's death. However, she decides to stay and work, but too many things remind her of the loss she just suffered.
- Meredith. She continues to deal with the virus showing signs of recovery and awakening from unconsciousness. While she is still in intensive care, she intervenes during the cardiac arrest of a Covid patient, but the effort is too much and her health worsens once again.
- Koracick. Being admitted to the same ward as Meredith, he decides to go to her room to talk about how both are experiencing the virus and the situation in the hospital, despite the fact that the contact between patients it is forbidden by the protocols.

Distanced from the first two, the third peak is towards the end of the season, more specifically in episode 17x13 "Good as Hell" and is due to a variety of factors:

- It seems that there is no longer hope for the health situation of Meredith, but Winston comes up with the idea of taking her daughter Zola to the hospital to get a medical reaction. Weber and Altman, after a little resistance, agree, arrange the meeting and finally Meredith wakes up.
- The covid case of episode concerns a woman treated by Bailey and Schmitt.
- Amelia Shepherd tries to get back to work, facing surgery on a patient of Link, after the lockdown caused by the pandemic and the period of maternity.

As for *New Amsterdam*, only the first 4 minutes and 44 seconds of the first episode of the third season "The New Normal" are dedicated to the full Covid emergency: indeed, images of all the constituent elements of the pandemic are shown on screen, as the first cases, mental collapse of the medical staff, the administration of vaccines in the hospital. At a later stage, the theme reappears through the consequences of the virus and this explains a total value of the Covid isotopy, of 25%. As you can expect, the highest value at the episodic level, about 40%, is in the first episode and is decreasing (except for the episode 03x03 "Safe Enough") up to a value of 6% in episode 03x09 "Disconnected". It is interesting to note the increase in value

in episode 03x03 "Safe Enough" of 39% (compared to the previous 30%): the increase is due to the fact that (I) both medical cases refer to Covid and the consequences of the virus on people's habits; (II) Health Board asks Goodwin to record a promotional spot to entice scared patients to return to the hospital for checkups.

In the case of *The Good Doctor*, only the first two episodes are set in the months of the pandemic rush, in fact it is then announced by actor Freddie Highmore that starting from episode 04x03 "Newbies" the TV series imagines a future in which the virus is under control. However, the value of Covid isotopy equal to 41% because the first two episodes ,04x01 "Frontline: part 1" and 04x02 "Frontline: part 2", count respectively 84% and 60% of Covid on the total playtime and this rise the total percentage that is the highest. It is shown the beginning of pandemic by means of a patient who goes to the hospital for respiratory symptoms, after hearing about the new pathology that is spreading in China. Then there are the elements common to all the TV series under consideration: lack of ventilators and masks, death of patients and professionals, problems in long-distance relationships, slippage of scheduled surgeries. After the decrease of episode 04x06 "Lim" (3%), the next increase in 04x09 "Irresponsible Salad Bar

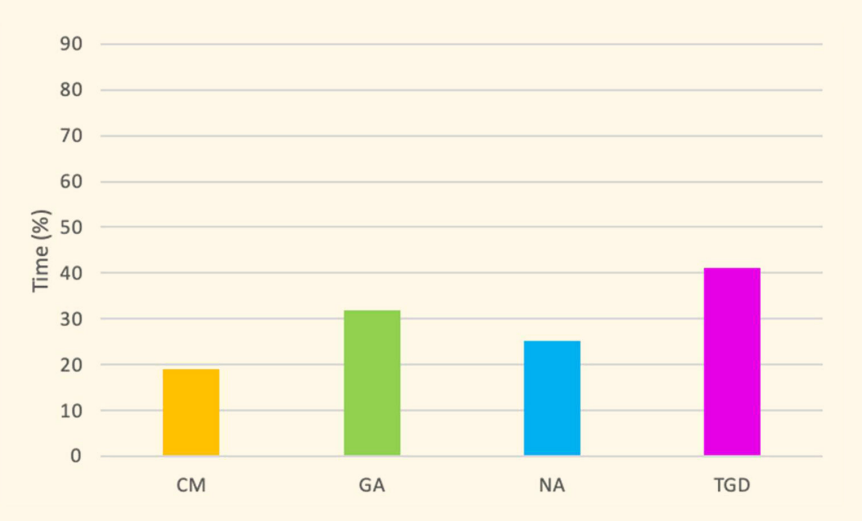

Figure 2
Percentage of Covid isotopy on total playtime of episodes selected of *Chicago Med* (CM), *Grey's Anatomy* (GA), *New Amsterdam* (NA) and *The Good Doctor* (TGD).

Practices" with a value of 18% is due to the focus on mental health of Dr. Lim struggling with a PTSD, caused by Covid, for which she begins to be treated with sertraline.

The chart in Figure 3 shows all the percentages of the presence of the sub-themes on the total Covid isotopy per series. As for *Grey's Anatomy*, emerge as the highest values the sub-code C2 of *Covid effects on mental health* (22%) and the sub-code C3 of *Symptoms of professionals or patients* (45%). As already explained in the previous section, Meredith Grey catalyzes the attention of the series with his hospitalization (as well as Tom Koracick). However, not only the protagonists are shown positive at Covid. Several patients are in fact treated for the virus, such as the nurse in episode 17x17 "Someone Saved My Life Tonight" who is discharged but suffering from side effects, is hospitalized again and operated by Grey and Altman. Particularly low is the C4 (*Scarcity of medical supplies*) sub-code's value (1%) whose declensions can be traced back to Koracick's wrong order of masks in episode 17x01 "All Tomorrow's Parties" and Pierce's idea of ventilators sharing in episode 17x10 "Breathe".

As in the case of *Grey's Anatomy*, also in *Chicago Med* the two sub-codes that have the highest values are C2 (33%) and C3 (33%). This product, even before Covid, often had the focus on mental health and sees the presence of Dr. Charles in several medical cases: in the episodes dedicated to the pandemic, the psychiatrist invites all colleagues to a therapy session to talk about the psychological relapses of the virus, both in the personal and professional field. The strong presence of the sub-code C3 is motivated by the focus on the Covid ward: Dr. Choi, Dr. Lanik and in particular

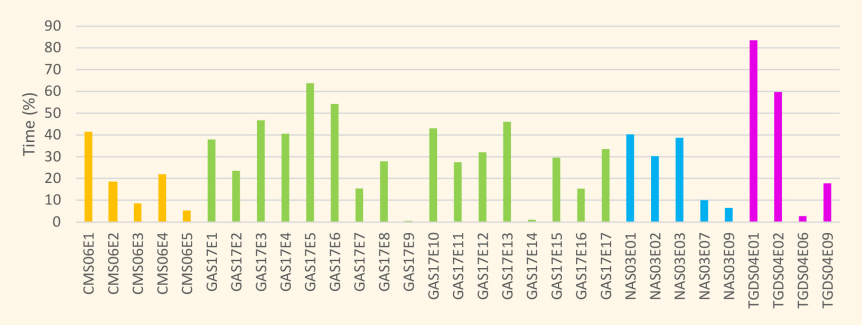

Figure 3
Percentage of Covid isotopy on episodes of *Chicago Med* (CM), *Grey's Anatomy* (GA), *New Amsterdam* (NA) and *The Good Doctor* (TGD).

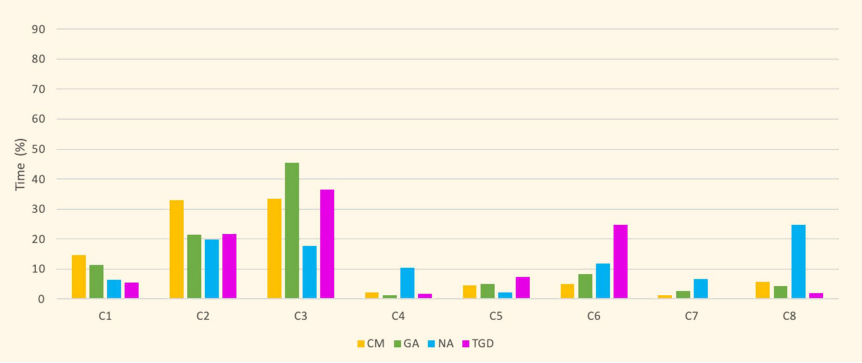

Figure 4
Percentage of sub-codes on Covid isotopy *Chicago Med* (CM), *Grey's Anatomy* (GA), *New Amsterdam* (NA) and *The Good Doctor* (TGD). The sub-codes in the y-axis are as follows: *Covid protocols* (C1), *Covid effects on mental health* (C2), *Symptoms of professionals or patients* (C3), *Scarcity of medical supplies* (C4), *Death of professionals or patients* (C5), *Human relationships modified by Covid* (C6), *Vaccines* (C7) and *Impact of Covid on the hospital system* (C8).

Nurse Sexton work intensively to beat the pandemic during which they lose many patients and discharge others. The sub-code with the lowest percentage (1%) is C7 (*Vaccines*), because the theme is only mentioned in episode 06x05 "When Your Hearth Rules Your Head" through Dr. Halstead.

Unlike all other series, *New Amsterdam* reports the highest value (25%) in sub-code of *Impact of Covid on the hospital system* (C8): it focuses, in fact, on the damage to the hospital system caused by Covid (e.g., delays in checkups with relative worsening of patients' health, inability to provide psychological support in presence) and on the career of professionals (e.g., the return of Reynolds from San Francisco). Value that instead seems to be in line with the other products is instead that of C2 (20%): this theme finds its expression especially in the difficulty of returning to normality after the complex period. The sub-code of *Death of professionals and patients* (C5) has a value of 2% which is distributed in the first two episodes in which images or verbal references to hospital deaths during the pandemic are shown.

The results of *The Good Doctor* are consistent with previous ones. The sub-code C3 is in fact the highest, with a value of 37%, and focuses on the first episodes that see the team at the frontline. It is necessary to emphasize the sub-code C6 (*Human relationships modified by Covid*) that is in the second place with the 25% of presence: some relationships become long-dis-

tance, such as that of Lia and Shaun, and others become complicated, as in the case of Park with Mia and their son. To be noted, the sub-code related to vaccines (C7) that is completely absent.

Covid Isotopy Correlation with other Isotopies

The last step of the results evaluation requires the identification of narrative formulas that can qualitatively describe how the Covid theme is distributed on the main isotopies, professional, sentimental and medical plot, within the series under examination. Three types of representation are expected: pathetic, professional or environmental. However, account must be taken of the fact that the formulas may not be so clear-cut and may show overlaps.

Starting from *Chicago Med*, the distribution of the Covid theme focuses on the isotopy of medical cases with a value of 48%. The data are justified, as previously said, by the fact that the most present codes are those of the effects of Covid on mental health and the symptoms of patients and professionals: these two sub-themes involve both the characters defined as "guest", and consequently the medical cases of episode, both the main characters which, in case of symptoms, involve not only the sentimental sphere but also the medical one (i.e., an overlap of sentimental and medical cases plots. The remaining time is almost equally distributed over professional (22%) and sentimental (29%) isotopies.

Two TV series feature a prevalence of Covid isotopy on the sentimental one: *Grey's Anatomy* (47%) and *The Good Doctor* (48%). As regards the first one, there are several elements that motivate the data: as for *Chicago Med*, the most present sub-codes are C2 and C3, but there are more main characters who get sick (e.g., Weber, Grey, Koracick) or who have relatives tested positive to the virus (e.g., Bailey). In addition, the sentimental plot is called into question by the many mental breakdowns of the professionals: Koracick in the first episode after he noticed not to have ordered correctly the masks, Bailey after the death of his mother, Hunt after having lost so many patients whose death he have to communicate to the families or still, Maggie struggling to work knowing her sister might not wake up from her coma. For reasons already explained above, the percentage of the Covid theme on that of medical cases is quite high (36%). However, the value of the Covid isotopy on that of medical cases with 36% remains very high due to the frequent overlaps between sentimental and medical cases plots during the pathology of Meredith and Koracick and the constant presence of hospitalized Covid patients.

From the coding of *The Good Doctor*, it emerges that the first data, the sentimental plot, is very similar to the previous series: in this case, however, it is also due to the code C6 that signals the human relationships modified by the pandemic. Murphy and her girlfriend are forced to face a long-distance relationship because Lia is not a first-aid worker and, like everyone else, must be in lockdown. Dr. Park already had a long-distance relationship with his wife Mia and their son: the impossibility of travelling caused a break between the two spouses and misunderstandings between father and son. Finally, Glassman and his wife whose forced coexistence in lockdown causes quarrels: on the one hand, he is not accustomed to give up work and on the other, she does not respect his spaces and wants to spend time together. Very high also the value of C/MC (45%) concentrated in the first two episodes which we have already discussed.

The last product investigated is *New Amsterdam*. The Covid theme falls mainly on the professional plot (38%): the distribution is consistent with the prevailing code, C8, which summarizes the impact of the pandemic on the health system. At only four percentage points, the value of the Covid isotopy on the sentimental one (34%) that could be explained by the presence of mental health and relationships (both couple and parental) that undergo changes.

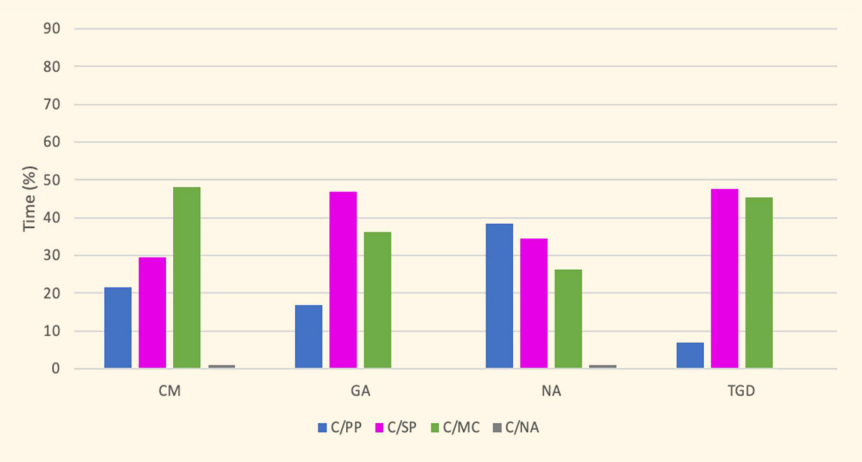

Figure 5
Percentage of Covid Isotopy (C) on Professional plot (PP), Sentimental plot (SP) and Medical Cases plot (MC) of *Chicago Med* (CM), *Grey's Anatomy* (GA), *New Amsterdam* (NA) and *The Good Doctor* (TGD).

Based on the results described in the previous paragraph, it is possible to assume the following narrative formulas:

- Pathetic. The depiction of pandemic mainly includes the declinations of the sentimental plot, such as couple relationships, friendships or personal crisis. Both *Grey's Anatomy* and *The Good Doctor* fit this description.
- Professional. The focus is on the aspects of management of the pandemic by hospitals, the social injustices caused by the virus on the most marginalized classes and the consequences of Covid on the health system. This representation can be found in the TV series *New Amsterdam*.
- Environmental. The theme is represented from the medical point of view, with the focus on the anthological plot, and includes a more frequent presence of characters called "guest". In this category falls *Chicago Med*.

It should be noted that, referring to the work of Rocchi and Pescatore on US medical dramas (2022), the results of the representation of the Covid theme and its distributions on the main isotopies are consistent with the narrative formula of the series under consideration: *Chicago Med* is part of the Doctors and patients formula, *Grey's Anatomy* belongs to that Soap one and *New Amsterdam* to the Social one. The only exception is *The Good Doctor*, but the two researchers in the paper mention a possible reversal of narrative trend that could bring this series closer to *Grey's Anatomy* (Rocchi and Pescatore 2022).

Conclusions

In conclusion, this chapter has provided valuable insights into the analysis of the Covid-19 theme in medical TV series, specifically focusing on *Chicago Med*, *Grey's Anatomy*, *New Amsterdam*, and *The Good Doctor*. The research aimed to quantify the narrative biomass of the Covid isotopy, correlate it with the main narrative isotopies, and identify the distribution of the theme on the professional, sentimental, and medical plot. The findings shed light on the different representations and formulas used to depict the Covid theme within the series.

The results show that each series has a unique approach in representing the theme of Covid-19. *Chicago Med* mainly focuses on the medical plot,

highlighting the effects of Covid on mental health and the symptoms experienced by patients and professionals. *Grey's Anatomy* and *The Good Doctor* display a predominance of the sentimental plot, exploring the impact of the virus on relationships, personal crises, and mental breakdowns. *New Amsterdam* primarily emphasizes the professional plot, delving into the consequences of the pandemic on the healthcare system: this led to the identification of the narrative formulas that reflect the characteristics just illustrated. It is then important to note that these results are only a first taxonomy, but they need to be deepened. However, these findings align with the narrative profiles identified by Rocchi and Pescatore (2022) in their research on US medical dramas, even though *The Good Doctor* deviates slightly from the expected formula, suggesting a potential narrative trend reversal that could align it more closely with *Grey's Anatomy*.

Looking forward, future perspectives involve expanding the analysis to other themes present in medical TV series and measuring their presence within the narrative. In addition, once the corpus has been expanded, it is proposed to refine the narrative formulas to obtain a more accurate description of products of the medical genre. Finally, efforts will be made to develop a protocol that traces the narrative arcs generated by the themes and the characters embedded within them. These future endeavors will further enhance our understanding of narrative ecosystems and the evolution of narration within the medical drama genre.

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