Student Conspiracism on Social Media: An Agenda Melding of Group-Mediated Deceptions

by

Philemon Bantimaroudis
University of Cyprus
Dept. of Social and Political Sciences
Journalism Program
Nicosia, Cyprus
Phone: +357-96126103
Email: pbanti01@ucy.acy.cy

Maria Sideri
Dept. of Cultural Technology and Communication
University of the Aegean
P.O. Box 108
Mytilene, Greece
T.K. 81100

Dimitris Ballas
University of Groningen
Dept. of Economic Geography
Landleven 1
9747 AD, Groningen, the Netherlands

Theodoros Panagiotidis
University of Macedonia
Department of Economics
156 Egnatia St.
T.K. 540 06 Thessaloniki, Greece

and

Athanasios Ziogas
University of Groningen
Dept. of Economic Geography
Landleven 1
9747 AD, Groningen, the Netherlands

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Abstract

This study examines students' social media interactions in relation to their subcultural explorations of a conspiratorial nature. Students from four European universities participated in a survey about conspiracy theories in social media group discussions. In the survey, we examined various social and media factors in relation to students' beliefs in conspiracy theories. The results of this exploratory study reveal that students treat social media as news sources; furthermore, they trust social media more than traditional, mass media. The study reveals demographic, personal and technological factors that encourage a mediated conspiratorial discourse.

Keywords: Agenda melding, conspiracism, group-mediated deceptions, social media

1. Introduction

On October 30, 1938, the famous actor, radio broadcaster, and cinema director Orson Welles became responsible for a case of mass hysteria. A radio broadcast prepared as a harmless Halloween prank turned into a mass nightmare for thousands of people, who really believed that an alien invasion from Mars was underway during that peculiar evening. According to Lowery and DeFleur (1995), many frightened listeners tried to make sense of conflicting information, ran for shelter in churches and other public buildings, while many got involved in car accidents as they were fleeing New York City and the surrounding areas.

This case of mass hysteria provided researchers with a unique opportunity to unravel the mechanisms of mass fear. This task was undertaken by Hadley Cantril (1940), who wrote an extensive report on the incident. His book, *The Invasion from Mars*, became one of the classic early studies of mass media influences and effects. Among various observations, Cantril highlighted people's confidence in radio as one of the core factors that increased the likelihood of mass hysteria. He recognized also the technical brilliance of the show and the timing of the broadcast – the radio program came at a time when Americans had endured years of economic recession and insecurity. Random factors, such as tuning in late, enhanced the listeners' fear. Finally, Cantril cited several audience characteristics as significant predictors of mass panic, namely the critical ability (or lack thereof) of listeners, strong religious beliefs, emotional insecurity and unusual listening situations – like the influence of frightened friends. As we revisit Cantril's findings almost 80 years later, there are some striking resemblances between the early days of radio and the current early days of social media. Indeed, there is evidence that people today increasingly use social media as news sources (Hladík and Štetka, 2017; Nielsen and Schroder, 2014). Apart from connecting people together, social media circulate content originating from multiple sources including mass media, various social media platforms, alternative media, organizations, groups, and individuals. Recognizing this capacity of social media to provide diverse content, including news, many consumers treat social media as news gatekeepers, choosing to receive their news from these platforms (de Zuniga et al., 2012).

Furthermore, as in the 1930s, there is a high level of insecurity in the world today. Instability, populist politics, environmental problems, economic issues, conflict and intense movements of populations have marked the advent of the 21st century. In parallel to technological developments during the early days of radio, current technological advances have empowered users in terms of navigation, easy access to information and the degree of interactivity. The critical ability of modern social media users attracts the attention of researchers in the same manner, as in the case of those

early radio listeners. In a further parallel of the early days of radio, a significant number of social media users today cannot distinguish between reality and a hoax (Balmas, 2014). Cantril (1940) points out that the number of people who panicked was not the majority of radio listeners. His findings indicate that only one in ten listeners fell for Welles' hoax. However, even the minority of listeners constituted a non-negligible portion of the audience.

2. Statement of the Problem

In this paper, we examine an agenda melding of deceptions or delusions, in social media settings. The terms 'deception' and 'delusion' are not always treated in the same fashion by specialists. They are clearly slippery terms that require a great deal of caution as we examine these social phenomena. The central idea that both terms convey implies a false understanding or a failure to make sense of one's natural or social environment. For example, Cantril (1940) was convinced that Welles' radio listeners were deceived or deluded because they failed to distinguish between reality and fiction. Today, we face similar challenges in regards to what is real or fake. Contemporary groups promoting arguments for a 'flat earth' attract significant numbers of like-minded participants while disputing governmental evidence against their views.[1]

We are aware of the difficulty of drawing a line between what is real and is fake in media settings. What in this paper we describe as deceptions or delusions might be approached by bloggers or social media contributors as 'alternative understandings' or 'alternative facts'. Following in Cantril's footsteps and while recognizing the profound difficulties in approaching those terms, the current study investigates collective deceptions. We use the terms 'deception' and 'delusion' interchangeably. We certainly do not argue that group deceptions are caused by media technologies. While resisting deterministic perspectives, we argue that social media environments constitute suitable hybrid media contexts where individual beliefs meld with group beliefs. Thereby, collective deceptions or delusions are scrutinized as social phenomena, examined in conjunction with digital media developments. We assume that social media platforms aid the melding process of individual or group agendas. In today's world, social media provide an array of opportunities for the empowerment of individuals, groups, organizations, institutions, and governments. Thereby, we assess an agenda melding process as individuals discover other like-minded individuals while engaging in discussions around their common interests.

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[1] https://www.smithsonianmag.com/smart-news/curious-history-international-flat-earth-society-180957969/

In this project, we focus on subcultural social media interactions of conspiratorial nature. There is widespread evidence emerging from mainstream as well as alternative media that social media users consume content of questionable validity, without scrutinizing its origin, coherence and logical foundation (Stempel et al., 2007). While recognizing the difficulties we encounter in evaluating such content, we proceed to present various problems that challenge those worldviews.

3. Conspiracism in Digital Settings

Scholars agree that conspiracism increasingly becomes a subcultural paradigm through which many individuals try to make sense of the world. In this project, we differentiate between conspiracies and conspiracism. The former refers to actual plans designed and, in some cases, executed by conspiring actors. We do not dispute the existence of actual conspiracies. By conspiracism, on the other hand, we refer to people's tendencies to explain world phenomena as the outcomes of conspiracies. Conspiracy theories have maintained the interest of people for centuries because of their enticing narratives clouded by mystery and suspense. However, in the 21st century, the advent of digital media has brought conspiracism to the forefront of mediated discussions. Most scholars recognize some common threads in the definitions they provide. Aaronovitch (2009) describes people's inclinations toward conspiracism as "the attribution of deliberate agency to something that is more likely to be accidental or unintended, therefore it is the unnecessary assumption of conspiracy when other explanations are more probable" (p. 29). Sunstein and Vermeule (2009) view conspiracies as a consistent effort of ordinary individuals to attribute what happens in the world to powerful people or entities. Brotherton (2013) describes conspiracies as popular stories that gain people's attention, for which there is no available evidence while, at the same time, they cannot be falsified either. Various cases of popular conspiracy theories can be traced in the literature, such as the 9/11 terrorist attacks (Stempel et al., 2007), the death of Princess Diana (Douglas and Sutton, 2010), the vaccines (Kata, 2010) and the chemtrails notions -- some of them promoted very effectively by Hollywood blockbuster movies. Along with some newer theories, there are also traditional conspiracies such as the existence of the Illuminati, the Rothschilds' activities, and JFK's assassination. It is also interesting to note that according to recent analysis of survey data "half of the American public consistently endorses at least one conspiracy theory" (Oliver and Wood, 2014: p. 952.

Scientists, in general, have treated conspiracy theorists as individuals, displaying signs of irrational thinking. Pipes (1997) describes conspiracism as a "vortex of illusion and superstition" (p. 173). Social psychologists recognize a mode of conceptualization known as "conspiracist ideation" (Swami et al., 2011). Stempel et al. (2007) refer to a similar construct of social structuring of beliefs. At the individual

level, numerous studies recognize personality traits that are prone to conspiracism, such as "low self-efficacy, lack of self-esteem, dissatisfaction with life, and anxiety, both as a temporary state, or a stable individual difference" (Brotherton & Eser, 2015, p. 1).

Postmodernism has provided a fertile ground for the proliferation of conspiracism. Although conspiratorial beliefs can be traced in medieval Europe, Aupers (2012) argues that a conspiracy-oriented discourse has been transformed over recent decades. Since the 1960s, narratives changed as they shifted from a focus on 'others' – such as the Jews – toward institutions, thereby discovering internal enemies. On different occasions, those internal enemies might consist of governments, corporations, and institutions. Knight (2000) argues that popular conspiracism has gained people's attention, becoming almost a form of obsession. People become suspicious as they look for conspiring agents in all social avenues of life. Wood et al. (2012) explain conspiracism as a preoccupation of mistrusting any type of information that originates from 'official' sources. Wood and Douglas (2015) note that a "conspiracy belief is not about believing in particular alternative theories, but in disbelieving in whatever the official story is" (pp. 1-2). Tending to mistrust official sources, people constantly seek for alternative explanations as more plausible forms of interpretation. This social tendency to seek alternative versions of interpretation gains momentum among various like-minded citizens while creating a suitable environment for the promotion of alternative stories touted as 'valid information'.

Interestingly, this atmosphere of suspicion and mistrust can be attributed to the nature of scientific discourse. For decades, university students have been taught to be suspicious of and to express their doubts about established teachings. Giddens (1992) points out that science depends on proofs and on doubts simultaneously. As skepticism was promoted in university classrooms throughout the 20th century and while postmodernists claim that 'truths' are social constructs based on ideologies and power negotiations, scientific knowledge has reached the point where it is no longer considered the only form of knowledge or the one superior to other forms of inquiries. In fact, scientific knowledge has been gradually delegitimized and scientific 'truth' has ceased to be a credible discourse. In this context, "conspiracy theories are cultural responses to these developments – they are strategies to rationalize anxieties by developing explicable accounts for seemingly inexplicable forces" (Aupers, 2012, p. 28). Scientists do not argue against the very existence of conspiracies. However, they recognize the difference between fact-based conspiracies and alternative theories, widely circulated online. Social media and the internet generally rendered conspiracism universally accessible. As people's distrust of established institutions increased, the dissemination of unsubstantiated information proliferated globally. Rojecki and Meraz (2016) point out that "facts mingle with half-truths and untruths to

create factitious informational blends" (p. 25). Popular disbelief is further fueled by media scandals witnessed by people worldwide. When people do not trust mass media, alternative agendas gain their attention. The internet has emerged as the ideal setting for ordinary individuals to expound their personal beliefs without any hindrance, and without feeling the need to prove anything through validated processes of verification. This hybrid form of 'information', partly personal, partly mediated, leads to new waves of misinformation. In this environment, conspiracy theories grow in a fertile ground as people constantly express their doubts while offering their own versions of reality. Stempel et al. (2007) show that "reading daily newspapers and newspaper websites are negatively associated with believing that the government assisted the 9/11 attacks, and getting news from blogs and occasionally reading a tabloid are positively associated with this conspiracy" (p. 363). As has been shown, conspiracists do not rely on standard evidence to understand social events; they rely on narratives to convey their information. For example, Guildry et al. (2015) point to the difference between statistical evidence and narratives. People pay attention to narratives while devaluing empirical presentations. Furthermore, people engage evidence by employing a diverse array of available interpretive tools. Scientists note that users tend to form communities of interest, seeking primarily belief reinforcement and personal validation. Bessi et al. (2014) present evidence for isolated clusters of individuals while polarized groups gather together seeking content that satisfies pre-existing beliefs. Individuals remain close to their community seeking information that reinforces their pre-existing views.

Researchers acknowledge various personality traits that are prone to conspiracism. Although beyond the scope of the current project, we should point out that powerlessness, low self-esteem, isolation and alienation along with anger, hostility and disappointment have been scrutinized in relation to conspiracy theories and there has been evidence to support the link (Stempel et al., 2007; Abalakina et al., 1999; Swami and Furnham, 2012). As Sunstein and Vermeule (2009) state, "when people are especially angry or fearful, they are more likely to focus on particular sorts of rumors and to spread them to others" (p. 216). Van Zoonen (2012) argues that political orientation and populism, in particular, should be examined as predictors of conspiracism. The emergence of populist rhetoric which is known for its simplicity and its anti-elitism unifies people under common general messages – freedom, morality, welfare, justice, etc. Furthermore, uncertainty resulting from the current conditions leads people to focus their attention on the morality of authorities' actions and this influences belief or disbelief in a conspiracy (Van Prooijen and Jostmann, 2013). Thus, insecurity, anxiety and people's need for control are closely related to their tendency to believe in conspiracy theories (Van Prooijen and Acker, 2015; Grzesiak-Feldman, 2013; Goertzel, 1994).

4. Social Media Agenda Melding of Conspiracies

Agenda setting theory evolved as one of the most significant paradigms dealing primarily with the transfer of salience from the media to the public (McCombs and Shaw, 1972). For almost fifty years, mainstream, mass media have been recognized as the dominant agenda setters in western, liberal democracies. The capacity of mass media to establish common themes while attributing prominence to news stories, political personalities or organizations has been recognized as a consensus building process (McCombs, 2014). For years, mass media functioned as agenda setters and moderators of public discussions. Citizens and consumers recognized those significant issues while ignoring subcultural themes and discussions. Although mass media still establish dominant agendas for societies, various alternative media promote segmented agendas while competing against mainstream sources. Thereby, the agenda setting phenomenon has expanded further, while encompassing individual, group or even community agendas. In some cases, vertical and horizontal media agendas converge while influencing one another (McCombs et al., 2014).

However, the current project deals with segmented agendas promoted by individuals as they seek support and validation of their beliefs in environments of virtual communities. Arguably, this agenda melding process operates far from mainstream, mass media processes. There is evidence that social media platforms empower lay people in establishing the salience of conspiratorial themes. Furthermore, like-minded individuals find one another in platforms promoting segmented interests. According to Ragas and Roberts (2009), "the agenda melding hypothesis posits when individuals join groups, they 'meld' their individual agendas with the agendas of the group. Groups and communities represent a 'collected agenda of issues' and 'one joins a group by adopting an agenda.' While agenda melding marks a departure from traditional agenda setting, the transfer of salience remains at its theoretical core and provides parsimony" (p. 46).

Although agenda setting in its traditional sense examines public agendas as a result of established media agendas, agenda melding examines individual and group agendas converging with one another as individuals find the harmony of beliefs in group mediated discourses. As early as 1999, the founding fathers of agenda setting theory clearly foresaw the evolution of the paradigm as web technologies shifted people's information seeking routines. Shaw et al. (1999) observed: "the mass media, while important, are only one of the many significant media, including people, through which we find comfortable social or public agendas with which to meld. All media are about relationships" (p. 3). The current project adopts a similar rationale. Adopting conspiracism as a personal agenda should be investigated as an individual effort to explain the world. However, individuals pursue explanations in communities, not in isolation. People seek validation from like-minded individuals. Shaw et al. (1999)

explain "that some force in individuals drives them to seek and adopt group or community agendas in order to belong, and that not to do so is highly uncomfortable. Agenda setting is an important part—but only an intervening part—of this social process of agenda melding" (p. 3). Agenda melding theory recognizes that individuals with established predispositions toward certain beliefs seek validation and reinforcement in groups or communities of like-minded individuals. In those environments, subcultural agendas meld with one another creating ideological bonds among community members.

5. The Current Project

The research presented in this article assumes that many conspiracy theories gain ground online as individuals search for content, exchange information, engage in discussions and reinforce each other's pre-existing beliefs. Easy access, navigation, participation and exchange of content among users provide new opportunities for strengthening one's beliefs while attracting like-minded individuals in various digital forums. The literature indicates that group-mediated deceptions might influence perceptions and behaviors. At the behavioral level, individuals might influence friends, families, and peers, in some cases, with dire consequences. One noted example of group-mediated deceptions or delusions involves vaccination. Kata (2010) presents such a case of social media discussions among doubtful parents leading to reinforcement of pre-existing fears and emotional reactions. Those discussions are rarely based on solid medical evidence. And, though physicians agree that no medication is totally side-effect free, the benefits of vaccination have been observed worldwide, as diseases that plagued entire populations in previous time periods have been eradicated. However, a conspiratorial discourse that advances an anti-vaccination rhetoric gains attention around the world. Social media has been at the center of this 'anti-vaccination movement'. According to Kata (2010), "these social groups exert considerable pressure on vaccination decisions by creating a 'local vaccination culture'." (Kata, 2010, p. 1709).

The work presented in this paper explores different social, technological and personal factors that seem to be related to conspiratorial beliefs. For example, the widespread belief that conspirators spray toxic substances on unsuspecting citizens with the aim of keeping them under control has gained users' attention on different social media platforms (Tingley and Wagner, 2017). A significant number of groups or communities discuss the 'chemtrails' issue while circulating different pieces of 'information' – including audiovisual evidence – that supposedly advances this particular belief. However, additional evidence is generated with other popular conspiracies dealing with vaccinations, the concealed cure-for-cancer conspiracy and the 9/11 attacks in the United States. Based on the literature, we pose the following

exploratory research questions to assess an agenda melding of group-mediated deceptions:

RQ1: To what extent do students engage in discussions of a conspiratorial nature on social media?

RQ2: What media and social factors are related to students' conspiratorial beliefs?

There are several assumptions underlying these exploratory questions. We assume that students devote significant attention to alternative content as conspiracy theories have attracted wide attention in recent years. Furthermore, we argue that of central importance to this work is the idea that social media has gained users' trust and are increasingly perceived as more reliable and trustworthy sources of 'news' than mainstream, mass media. There is a widespread discussion among scholars and the general public alike that people tend to seek information and belief reinforcement from like-minded peers who share their beliefs on social media platforms. We assume that as people participate in mediated group discussions about conspiratorial content, there will be a higher probability of users' adherence to conspiratorial perceptions. This assumption does not imply a causal relationship between participation and belief formation. In fact, the literature indicates that the opposite might be true – individuals who are already predisposed toward conspiracism seek other like-minded individuals in social media settings (Bessi et al., 2014).

6. Method

A survey was conducted among students from four public European universities in Greece, Cyprus, and the United Kingdom. Entire classes of undergraduate students from selected modules participated in the survey. Questionnaires were distributed on different campuses during the fall of 2016 by a team of researchers working together to administer the survey. A sample of 477 students filled out the questionnaire. Because in strictly statistical terms, the sample was not randomly selected, we are hesitant about generalizing these results to other student populations. The sample is primarily comprised of undergraduate students lacking the demographic diversity of a random sample. However, it represents a generation of millennials, a distinct cohort of people which grew up with technology, and, thereby, allows us to draw some meaningful preliminary conclusions, which can be followed up by future studies. From all 477 students participating in the survey, 336 (70.4%) represent two universities from Greece, 73 (15.3%) represent a Cypriot university and 68 (14.3%) represent a university in the United Kingdom. The students surveyed come from three countries that have experienced significant social, political and economic changes. Since 2010, Greece has dealt with a significant economic crisis and accepted major austerity measures cutting public spending while experiencing a rapid rise in

unemployment. Cyprus dealt with a banking crisis which led to an unprecedented bail-out program resulting in significant loss of people's savings. In a referendum about the country's relationship with the European Union, the British people voted in favor of exiting the Union, popularly known as Brexit. The outcome of the British referendum has initiated a period of political turbulence in the context of the European Union. All three countries represented in the sample – and, arguably, many other western states – display signs of political polarization, giving rise to parties of the far right or the far left while promoting dubious, populist personalities at the core of political discourse.

The sample is comprised of 202 (42.3%) male and 275 (57.7%) female students. There are three primary nationalities represented in the sample: Greek, Cypriot and British, while eight students indicated that they were not nationals of the participating institutions' countries. Furthermore, there are some variations in terms of income among respondents, a finding that is consistent with income per capita records, which are officially available for each country. The vast majority of respondents are undergraduate students (99.2%). The study is focused on students as a distinct group of respondents who are expected to assume future leadership positions in various sectors of society while influencing national policies and future initiatives in different European countries. Though this is not a random sample in the strict sense, it does represent youth segments with a significant potential for influencing others.

7. Questionnaire Design

The questionnaire included categorical items as well as ordinal/interval variables designed to collect demographic information and to assess participation in various groups/communities. The Likert scale was used for more elaborate measures of attitudes and beliefs. To assess the reliability of the instrument, we measured Cronbach's Alpha, which registered at acceptable levels (0.758).

8. Analysis of the Data

We used both descriptive and inferential statistics to analyze the data. Diagnostic tests were used to assess the robustness of our findings. For example, we checked our data for the independence of observations, multicollinearity, and heteroskedasticity. We designed a regression model to assess the factors that are significantly related to students' agreement with conspiratorial beliefs. Our primary premise is that social media group discussions with a strong emphasis on conspiracies should be treated as the primary independent variables while various other factors should be scrutinized as additional control variables. In investigating these factors, given that the mentioned *overall_agreement* variable is a dummy variable, we cannot apply the method of Ordinary Least Squares (OLS) due to some limitations. First, by

using OLS we assume that the probability of our dependent variable moves linearly with the value of the explanatory variable and second, there is no guarantee that the estimated probability values from the OLS will lie within the [0,1] interval. In addition, OLS assumes continuous dependent variable and not binary. Logit and Probit models can be used instead. These models were developed with a binary dependent variable in mind. Initially we tried both the Logit and the Probit models. However, the results remained both qualitatively and quantitatively the same. Thereby, we proceeded with the marginal effects approach. The latter yielded a single value for a one percent change in the explanatory variable on the probability that the dependent variable takes the value of one. We used the Marginal Effects at the mean (MEM) of all regressors.

Profile Variables

The questions that students answered provided evidence for the following characteristics of the sample:

Gender: A nominal scale, demographic variable.

Parents' level of education: A categorical variable separating students' parents in terms of their level of education.

Nationality: A nominal scale variable with four categories: Greek, Cypriot, British and other.

Income: An ordinal scale variable measured income at the following levels in Euros or British Pounds: (a) Up to 10,000, (b) from 10,001 to 30,000, (c) from 30,001 to 50,000, and (d) over 50,000.

Participation, Attitudes and Beliefs Variables

Political orientation

This variable has the following categories: Far left, left, center, right and far right.

Feeling a citizen of the European Union

This variable has the following categories: (a) Yes absolutely, (b) yes, to some extent, (c) neutral, (d) not really, and (e) definitely not.

National pride

This variable has the following categories: (a) very proud, (b) moderately proud, (c) neutral, (d) not very proud, and (e) not proud at all.

Fear of losing one's job

These questions are related to perceived levels of fear because of job insecurity. This variable is measured on a scale from 1 to 10, where 1 indicates that a person is not fearful at all and 10 represents a maximum level of fear. The scale chosen is similar to the Eurobarometer survey conducted every year by the European Commission.

Time spent on social media every day

This variable has the following categories: (a) up to 15 minutes, (b) up to 30 minutes, (c) up to one hour, (d) up to two hours, and (e) more than two hours.

Social media concerns

Respondents provided a yes/no answer to the following question: Do you have any concerns about the use of social media?

Participation in social media groups/communities

Respondents provided a yes/no answer to the following question: Do you participate in a group or community which is active in the context of social media?

Participation in political discussions

Respondents provided a yes/no/rarely answer to the following question: Do you participate in political discussions?

Trust in mainstream media

Students responded to the following question: Do you believe that mainstream media lie? This variable has the following categories: (a) Yes, absolutely, (b) yes, to a point, (c) neutral, (d) probably not, and (e) definitely not.

Reliability of mainstream media

Students responded to the following question: Do you believe that mainstream media are reliable? This variable has the following categories: (a) More than social media, (b) the same as social media, and (c) less than social media.

Trust in social media

Students responded to the following question: Do you trust social media? This variable has the following categories: (a) More than mainstream media, (b) the same as mainstream media, and (c) less than mainstream media.

Social media -- thematic discussions

Students responded to the following statements with a yes/no answer:

(a) "Citizens are sprayed with toxic substances from airplanes so that they don't react."
(b) "Vaccinations are dangerous because pharmaceutical companies lie."
(c) "The September 11, 2001, attacks against New York City were organized internally by the United States Government for its own purposes."
(d) "The drug that cures cancer has been discovered, but they do not release it because of profitability concerns."

Conspiracism

Students responded to the following statements on a scale from 1 to 7, where 7 means absolute agreement and 1 means absolute disagreement.

(a) "Citizens are sprayed with toxic substances from airplanes so that they don't react."
(b) "Vaccinations are dangerous because pharmaceutical companies lie."

(c) "The September 11, 2001, attacks against New York City were organized internally by the United States Government for its own purposes."
(d) "The drug that cures cancer has been discovered, but they do not release it because of profitability concerns."

9. Results

To assess influences on conspiratorial beliefs, we used several measures of both descriptive as well as inferential nature. Students indicated that they spend a lot of time on social media. 212 (44.4%) students indicated that they spend more than two hours daily on social media, followed by those who spend roughly two hours (25.4%). In other words, almost 70% of all respondents spend at least two hours every day on social media activities. This finding indicates the importance of social media for daily routines of students, confirming existing evidence that social media increasingly claim more of people's free time (Fuchs, 2014). Furthermore, a significant number of students indicated that they believe in conspiracy theories. Four main variables provide an index of students attributing value to conspiracy theories. Specifically, their belief in 'chemtrails', a conspiracy theory claiming that sinister governments keep populations subdued through dropping toxic substances on them; the 9/11 conspiracy theory expresses the belief that the 9/11 terrorist attack was planned and executed by the US government; the 'cancer cure' conspiracy claiming that there is a cure for cancer which is withheld from people to protect the financial interests of major pharmaceutical corporations; and, finally, a vaccine-related conspiracy claiming that vaccines are dangerous because pharmaceutical companies lie about their side effects. Our descriptive evidence reveals that students' beliefs in conspiracy theories vary, as their level of agreement shows significant fluctuations from theory to theory. Table 1 shows evidence of agreement recorded on a scale from 1 to 7. Those who indicated a level of agreement from 5 to 7 indicated the strongest agreement with the aforementioned conspiracy theories. Students showed their strongest agreement for the 'cancer cure' conspiracy (50.5%) followed by the 9/11 case (41.1%), the vaccination issue (23.7%) and the 'chemtrails' scenario (15.8%).

Table 1. Students believing in conspiracy theories (N=477).

Chemtrails	9/11 Attack	Vaccines	Cancer Cure
75 (15.8%)	196 (41.1%)	113 (23.7%)	241 (50.5%)
M=2.61	M=3.99	M=3.20	M= 4.34
SD=1.82	SD=1.96	SD=1.75	SD=2.13

As we generated descriptive evidence, we evaluated the question of trust in social media, in contrast to trust in mainstream, mass media. Our descriptive analysis yielded some interesting results. The overwhelming majority of students (79.4%) believe that "mainstream media lie." Only 18.4% of students were neutral while a small minority (2.2%) disagreed with the statement. Similarly, when students were asked whether they perceived mainstream media as reliable, 15.7% responded "more than social media." However, most students (50.9%) responded "the same as social media" while 33.3% responded "less than social media." Both variables indicate that students display more trust in alternative 'news' sources, while clearly displaying their distrust of traditional, mass media outlets. Along the same lines, when asked "do you trust social media," 33.1% of students indicated "more than mass media", 45.9% said "the same as mass media" while 21% responded "less than mass media." We also show the different distribution of student's agreement with conspiratorial beliefs based on their levels of income by comparing the low and high income families. It is evident that low income students are distributed in the centre of the graph while for high income students the observations are clustered at the left of the distribution suggesting low levels of agreement

Figure 1. Students responding to the question: "Do you trust social media?"

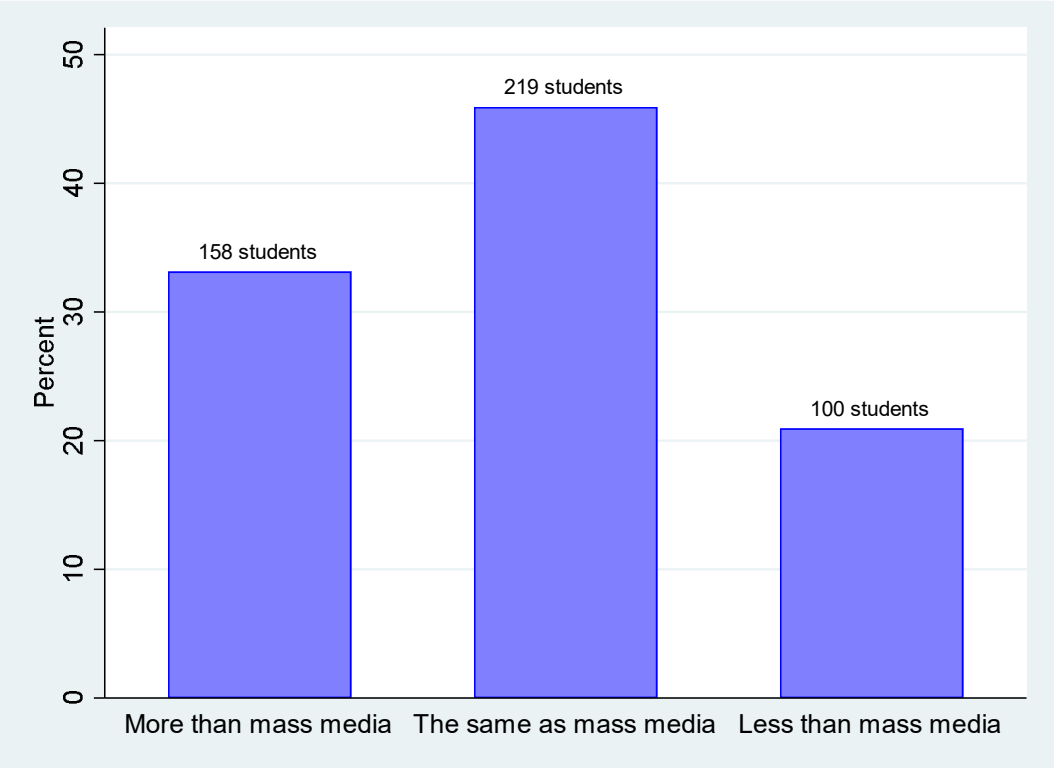


Figure 1. Student's agreement with conspiratorial based on their income.

One of the fundamental assumptions of the current project is that social media are considered more trustworthy and reliable than mainstream, mass media sources. An additional assumption of our current exploration is that students participate in social discussions about conspiracy theories. More than one-third of the students surveyed indicated that they participate in at least one type of discussion of a conspiratorial nature.

Our regression analysis was designed on the premise that social media group discussions with a strong emphasis on conspiracies should be treated as the primary independent variables while various other factors should be scrutinized as additional control variables. Table 2 includes the full model, while in Table 3, we re-estimated the regression by keeping only the significant variables. It should be noted that for variables with more than two categories, even if one category was significant in the full model, we included it again in the second model. The marginal effect of an independent variable is the partial derivative of a given function of this variable. In our analysis, it is the change in probability of believing in conspiratorial beliefs if one particular independent variable changes by a unit. Thereby, in the first entry, the marginal effect of 0.402 means that on average, students who provided an answer of 6 in the question regarding fear because of job insecurity (a value of 1 represents no fear) display 40.2% higher probability in believing in conspiracy theories. On the contrary, a negative marginal effect like the -0.635 for a value of 7 in the education levels of student's mother indicates that this student encounters 63.5% lower probability in believing in conspiracy theories. The same reasoning applies to the rest of the variables.

Table 2. Predicted probabilities of believing in conspiratorial beliefs. Full model specification.

Name of the independent variables	Marginal Effects	Standard Errors (Delta-method)	*p* value
Student's Fear of Losing Job : 6	0.402**	(0.160)	0.012
Student's Feeling as Citizen of Europe : Not really	0.375***	(0.115)	0.001
Student's Fear of Losing Job : 5	0.356***	(0.137)	0.010
Student's Fear of Losing Job : 10	0.232**	(0.111)	0.037
Education Level of Student's Father : 7	0.228	(0.180)	0.205
Student's Fear of Losing Job : 7	0.210	(0.140)	0.132
Student's Participation in Discussions about Cancer : Yes	0.196***	(0.0655)	0.003
Student's Participation in Discussions about Chemtrails : Yes	0.196**	(0.0977)	0.045
Student's Fear of Losing Job : 3	0.195	(0.171)	0.254
Student's Feeling as Citizen of Europe : Neutral	0.194*	(0.0991)	0.050
Student's Fear of Losing Job : 8	0.150	(0.119)	0.208
Student's Fear of Losing Job : 9	0.148	(0.118)	0.208
Student's Feeling as Citizen of Europe : Definitely not	0.118	(0.132)	0.371
Student's Feeling as Citizen of Europe : Yes, to some extent	0.108	(0.0882)	0.220
Education Level of Student's Father : 3	0.103	(0.139)	0.456
Student's Participation in Discussions about 9/11 : Yes	0.0859	(0.0798)	0.282
Education Level of Student's Father : 2	0.0795	(0.140)	0.571
Student's Fear of Losing Job : 4	0.0740	(0.171)	0.665
Gender of Student	0.0639	(0.0572)	0.264
Education Level of Student's Father : 4	0.0554	(0.148)	0.709
Education Level of Student's Father : 5	0.0394	(0.172)	0.818
Income of Student's Family : from 30.001 to 50.000	0.0194	(0.0828)	0.815
Income of Student's Family : from 10.001 to 30.000	-0.0191	(0.0659)	0.772
Student's Fear of Losing Job : 2	-0.0306	(0.194)	0.875
Student's Participation in Discussions about Vaccinations : Yes	-0.0489	(0.0981)	0.618
Do you Believe that Mainstream Media Lie? : Yes, to a point	-0.0575	(0.0728)	0.430
Education Level of Student's Father : 6	-0.192	(0.240)	0.424
Education Level of Student's Father : 8	-0.245	(0.234)	0.294
Do you Believe that Mainstream Media Lie? : Neutral	-0.252***	(0.0895)	0.005
Income of Student's Family : over 50.000	-0.280**	(0.110)	0.011
Education Level of Student's Mother : 3	-0.332***	(0.0905)	0.000
Education Level of Student's Mother : 4	-0.389***	(0.108)	0.000
Education Level of Student's Mother : 8	-0.415	(0.262)	0.113
Education Level of Student's Mother : 5	-0.434***	(0.156)	0.005
Do you Believe that Mainstream Media Lie? : Probably not	-0.444***	(0.138)	0.001
Education Level of Student's Mother : 2	-0.576***	(0.109)	0.000
Education Level of Student's Mother : 6	-0.613**	(0.276)	0.026
Education Level of Student's Mother : 7	-0.635***	(0.132)	0.000
Do you Believe that Mainstream Media Lie? : Definitely not	Omitted	-	-
Number of observations	473		

NOTE: All predictors at their mean value. Marginal effects for factor levels is the discrete change from the base level. Education level of 3 is considered higher compared to 4 and a level of 5 higher than 4. Accordingly, fear of value 3 is consider higher than fear of value 2. The other responses can be interpreted in the same way. Marginal effects were calculated using the Delta-method of Stata 15.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 3. Predicted probabilities of believing in conspiratorial beliefs. Only significant variables are included.

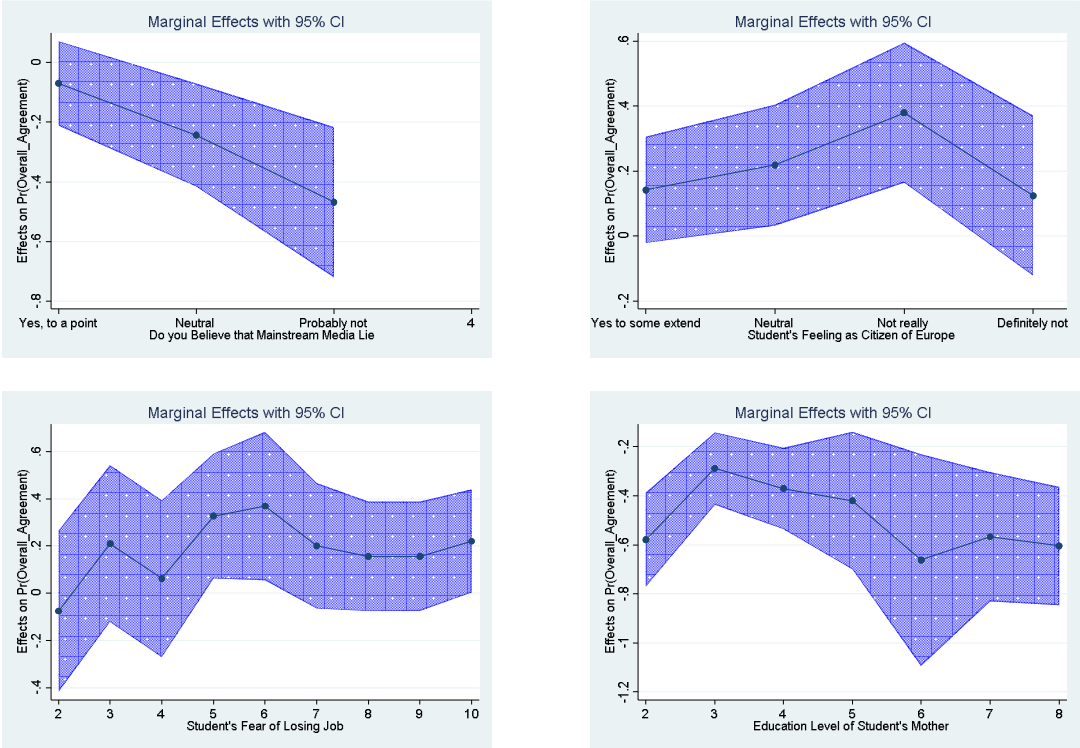
Name of the independent variables	Marginal Effects	Standard Errors (Delta-method)	*p* value
Student's Feeling as Citizen of Europe : Not really	0.379***	(0.110)	0.001

Student's Fear of Losing Job : 6	0.369**	(0.160)	0.021
Student's Fear of Losing Job : 5	0.327**	(0.136)	0.016
Student's Participation in Discussions about Cancer : Yes	0.224***	(0.0621)	0.000
Student's Fear of Losing Job : 10	0.221**	(0.111)	0.048
Student's Feeling as Citizen of Europe : Neutral	0.218**	(0.0947)	0.021
Student's Fear of Losing Job : 3	0.210	(0.170)	0.216
Student's Fear of Losing Job : 7	0.201	(0.136)	0.139
Student's Participation in Discussions about Chemtrails : Yes	0.184**	(0.0909)	0.043
Student's Fear of Losing Job : 9	0.156	(0.118)	0.185
Student's Fear of Losing Job : 8	0.156	(0.118)	0.188
Student's Feeling as Citizen of Europe : Yes, to some extent	0.142*	(0.0835)	0.090
Student's Feeling as Citizen of Europe : Definitely not	0.124	(0.126)	0.324
Student's Fear of Losing Job : 4	0.0619	(0.170)	0.716
Income of Student's Family : from 30.001 to 50.000	0.00655	(0.0799)	0.935
Income of Student's Family : from 10.001 to 30.000	-0.0282	(0.0649)	0.664
Do you Believe that Mainstream Media Lie? : Yes, to a point	-0.0698	(0.0725)	0.336
Student's Fear of Losing Job : 2	-0.0759	(0.175)	0.664
Do you Believe that Mainstream Media Lie? : Neutral	-0.243***	(0.0885)	0.006
Education Level of Student's Mother : 3	-0.289***	(0.0755)	0.000
Income of Student's Family : over 50.000	-0.298***	(0.106)	0.005
Education Level of Student's Mother : 4	-0.370***	(0.0847)	0.000
Education Level of Student's Mother : 5	-0.420***	(0.143)	0.003
Do you Believe that Mainstream Media Lie? : Probably not	-0.469***	(0.129)	0.000
Education Level of Student's Mother : 7	-0.567***	(0.134)	0.000
Education Level of Student's Mother : 2	-0.579***	(0.0975)	0.000
Education Level of Student's Mother : 8	-0.605***	(0.123)	0.000
Education Level of Student's Mother : 6	-0.662***	(0.220)	0.003
Do you Believe that Mainstream Media Lie? : Definitely not	Omitted	-	-
Number of observations	473		

NOTE: All predictors at their mean value. Marginal effects for factor levels is the discrete change from the base level. Education level of 3 is considered higher compared to 4 and a level of 5 higher than 4. Accordingly, fear of value 3 is consider higher than fear of value 2. The other responses can be interpreted in the same way. Marginal effects were calculated using the Delta-method of Stata 15.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Figure 2. Plots of the most important marginal effects.



Our analysis yields some interesting findings. Gender is insignificant suggesting that we cannot differentiate male and female students in connection with their conspiratorial beliefs. High levels of family income displays a reverse relationship with conspiracism which is statistically significant at the 0.05 level, while for lower levels of income the possibility that someone believes in conspiracy theories is insignificant. Based on calculated marginal effects, the probability of a student who comes from a high income family to believe in conspiracy theories is 28% less than from a student that comes from a low income family. Thereby, the richer a student's family is the lower the probability that the student has a tendency towards conspiratorial beliefs. The differences that accrue between mother's and father's educational background are also worth discussing. We observe that the variable capturing mother's education is reversely correlated and significant even at low levels of education. On the other hand, we observe that the low educational level of father is positive associated with conspiracy beliefs and this association is reversed as the level of father's education increases. However, the education of the father is never statistically significant. A student's fear of losing a job displays some interesting information as well. As a

student is more afraid of a sudden loss of her or his job, the likelihood of belief in conspiracism increases. As values of the fear factor remain low, the coefficient is negative or statistically insignificant, while as the fear scale rises, the coefficient becomes positive and significant. Based on marginal effects, a student who is very afraid of losing her or his job is 23% more likely to believe in conspiratorial beliefs.

Time spent on social media and students' distrust of mass media did not yield any significant influences. The variables capturing students' participation in social media discussion groups are of primary interest. Out of four different thematic groups, only two are statistically significant. Participating in discussion groups focused on the chemtrail issue increases the probability of conspiratorial beliefs by 20% at the 10% significance level. Discussing the cancer cure conspiracy increases the probability of subscribing to conspiracism by 20% at the 1% significance level . The Pseudo R-square measure is relatively low (0.214) but based on the Likelihood Ratio test (140.28), we reject the null hypothesis in favor of our model.

10. Discussion

This exploratory study yields some interesting findings related to social media interactions and conspiracy theories. It shows that a significant number of students treat certain conspiracy theories as a valid framework through which they make sense of the world. Furthermore, they are active seekers of content with the aim of participating in thematic social media discussions. This finding is indicative of agenda melding as students report their active participation in communities that promote their individual interests.

The results are consistent with a recent national survey in Greece showing, for example, that 26.5% of respondents believed that the emissions of airliners visible in the sky are 'chemtrails' of substances dropped on unsuspecting populations by unnamed conspiracists.[2] This national public opinion poll converges with our student survey, documenting the degree of acceptance of conspiracism as an interpretive mechanism. Data indicate that conspiracism cannot be traced only in marginal groups with particular demographic traits, but it seems to be gaining ground in large segments of society, like the student population. Our sample indicates that a significant number of students display an interest in these areas of public inquiry.

However, the four conspiracy theories under scrutiny are not equally appealing and even when they seem to be popular among students they don't display

[2] Dianeosis Research and Policy Institute (2015). Public Opinion Research entitled: "What Greeks Believe."

the same influence on conspiratorial belies. It seems that certain health-related topics such as the 'cancer cure' issue are very popular, while influencing students' conspiratorial tendencies. If the 'chemtrails' notion can be linked to health-related concerns, then arguably health-related conspiracies have become the subject of social media discussions because people worry about health-related effects. Surprisingly, the students' discussions about vaccinations did not influence their beliefs as this particular relationship did not register as significant. We believe that this finding would resonate better with parents caring for young children. So arguably this finding does not apply to this particular segment in a pronounced manner. This study demonstrates that students consider social media credible and trustworthy sources, as they engage in news and information seeking activities. The vast majority of our sample trust social media more than mass media or, at least, they consider both equally credible. Only a minority of students indicated that they trust mass media more than social media. It is evident that social media platforms function as 'news' gatekeepers and information providers. This descriptive finding shows that students trust other individuals with similar beliefs more than they trust professional journalists and mainstream media.

What are the implications of this finding? It is very likely that students seek validation of their pre-existing beliefs in social media communities. Although these findings merits additional attention, the current study documents a relatively strong relationship between individual beliefs and social media interactions with like-minded individuals. The study shows that individuals converge at different levels and with varying intensity, while moderating factors, such as fear, income, and the educational level of their mother explain increased melding with social media groups. In our fear registers as a significant moderating factor related to conspiracism. As the literature indicates, fearful personalities interacting with like-minded individuals can acquire distorted views of the world leading to interpretations that cannot be supported empirically. Although this finding can be linked to Cantril's research on mass hysteria, it merits additional attention in current social conditions. How can we explain students' fearful dispositions? Is fear a personality trait? Are students responding to news spreading messages of fear? Or is fear a trait of those social media groups that students interact with? Additional research is necessary to unravel the role of fear in agenda melding processes.

The current study is indicative of changing patterns of 'news' acquisition and group interaction with digital content. Social media groups or communities become significant social structures in which individuals develop nebulous understandings of social phenomena. The current study does not explain the dynamics of information flow or segmented gatekeeping practices. It recognizes, however, that many students,

despite their access to scientific methodologies and empirical data, choose to expose themselves to subcultural influences in social media environments.

The evidence presented in this paper can provide insights and the basis for further research in this field aimed at bringing forward additional knowledge that explains this current predilection toward what was once known as marginal, subcultural and unfounded. Furthermore, new theories are necessary to unravel the potential repercussions of fake news, conspiratorial and pseudo-scientific content as they gain ground in liberal, democratic contexts and especially in the minds of young thinkers and future scientists.

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