

## **Digital media may cultivate awareness and responsibility in users: a case for optimism**

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### **Abstract**

Every major communication technology carries identifiable "potentialities" that reshape culture, cognition, and social organization. The potentialities of digital communication technologies include, on the one hand, broad but superficial engagement, unreflective emotional reactions, and tribalism; on the other hand, they enable cosmopolitan attitudes and the expansion of our circle of care; in addition, digital communication technology turns the users' attention to the users' own choices. This article argues that reflective engagement with digital media can promote awareness and responsibility. We propose that school curricula focus more on understanding cognitive biases, recognizing nuances, postponing judgment, being aware of the potentialities of digital communication, and being aware of one's own choices. We draw on historical comparisons with earlier communication transitions, and in the Conclusion section, we provide a link to the *Reader* with assignments that can be used as a framework for the purposeful adaptation of the new medium. Challenges to the ideas of this paper are addressed in Appendix 2 through "Disputation between The Skeptic and The Believer".

### **Key words**

Digital media, communication technologies, responsibility, media ecology, bias of the medium, cognitive biases, nuanced argument, curriculum, potentiality, purpose

### **Historical overview in the framework of media ecology\***

A central insight of the discipline of media ecology is that new technologies change culture in unanticipated ways that extend far beyond the technology's immediate practical uses. They alter the job market, education, institutions, morals, and mental processes. These changes are complex and alter the previous social balance. We can see this by looking at previous changes in communication and tracing their costs and benefits.

#### *Oral language*

The development of oral language, along with opposable thumbs and upright posture, allowed humans to create cultures. Charles Darwin explained in *The Descent of Man* (1871/2010) the role of articulate language in forming **human intellect**:

As the voice was used more and more, the vocal organs would have strengthened and perfected through the principle of the inherited effects of use; and this would have reacted on the power of speech. But the relation between the continued use of language and the development of the *brain* has no doubt been far more important. The mental powers in some early progenitor of man must have

been more highly developed than in any existing ape, before even the most imperfect form of speech could have come into use; but we may confidently believe that the continued use and advancement of this this power would have reacted on the mind by enabling and encouraging it to carry on long trains of thought. *A long and complex train of thought can no more be carried out without the aid of words, whether spoken or silent, than a long calculation without the use of figures or algebra*” (p.32; emphasis added)

Darwin also explains the connection between articulate language and the development of **morality**: [T]he social instincts, which must have been acquired by man in a very rude state, and probably even by his early ape-like progenitors, still give the impulse to many of his best actions; but his actions are largely determined by *the expressed wishes and judgement of his fellow men*, and unfortunately still oftener by his own strong, selfish desires. (p.50, emphasis added) [Sympathy] “gives the first impulse to benevolent actions[...] But there is another and much more powerful stimulus to the development of the social virtues, namely, the praise and the blame of our fellow-men” (p.99)

Language allowed humans to rely less on instinct and more on reasoning and cultural norms. It allowed the ability to abstract. Human beings became able to detach themselves from their immediate reality. They passed on traditions, proverbs, myths to their heirs. The Romantic movement in literature and vitalists such as Bergson and Lawrence have treated this as a kind of Fall.

### *Writing*

But then every new medium for communication can be a fall. For instance, Socrates emphasized the dangers of writing. He left no writings of his own and pointed to the dangers of offloading information on an external carrier. He thought memory a better repository (Plato, *Phaedrus*). Plato’s seventh letter objects to the fact that this technology created an opportunity to share knowledge with an anonymous audience. He thought words should be selected to improve the being of a specific person. This bias is aristocratic. However, most of us have a democratic bias: we are happy that we can spread inventions, knowledge and organizational structures to whomever (Diamond, 1997).

Writing also changed the nature of religion. Religions of the book were created. Heretics could now be separated from the orthodox, and faiths can be organized across continents.

### *Print*

McLuhan argued that the spread of print has led to the growth of **rationality** and analytic abilities (1965). As texts became more available, they became less sacred. The Age of Enlightenment became the age of criticism. Orthodoxies were tested and often found wanting. Moreover, print allowed the sharing of new mathematical studies and technical inventions which allowed for the Industrial Revolution, which restructured society and changed the balance of political power from the nobility to the bourgeoisie (Pinker, 2011 and 2018). Medicine and hygiene improved, slavery

and judicial torture were abolished, equal rights were codified. Peasants were driven from their holdings to the city to work in factories and live in slums. The increase of texts and truths was disconcerting. For example, Lope de Vega has his character say: “so many books - so much confusion! All around us an ocean of print and most of it covered in froth” (cited in Carr, 2011). A culture must invent a way to digest its knowledge.

By not adopting the printing press, the Islamic world put itself at a political and economic disadvantage in relation to the West (Acemoglu and Robinson, 2012). On the other hand, until recently, it did not contribute to the damage to the environment that came with the Industrial Revolution. As the entire world ties itself into the new economy, the costs and benefits of that economy are redistributed.

#### *Electronic and electric communication technologies*

This is the global village McLuhan described. Combined with reduced cost and increased speed of international travel, the reach of electric and electronic technologies contributed to the growth of **cosmopolitanism**. Cosmopolitanism grows slowly. Motion pictures, radio, and television begin to supplant the book. McLuhan and then Postman wrote interesting analyses of these media. Postman was particularly critical of the bias of TV which he argues reduces everything to entertainment (1985) and degrades the political processes; and in fact a reality television host did become president, largely because of his ability to use the medium. Postman’s arguments are predicated on the premise that televised debates are not forums for presenting rational agendas, but showcases for entertainment, primarily because viewers have become educated to desire entertainment, not reason. If this is true, debates on television do not serve their ostensible purpose. Postman also believed that a TV-saturated society was likely corrupted. But of course, the television he experienced is quite different from what appears on the screen today. Consumers now have access to a remarkably large number of viewing options. Steve Johnson (2006) points out that TV entertainment in the 21st century allows the viewer more complex and intellectually challenging programs. Programs are no longer broadcast but narrowcast, which allows sophisticated choices that were unfeasible in the 1950’s, while allowing audiences to keep up with the Kardashians.

#### *Digital communication technologies*

We see four important biases, or potentialities, of the digital medium. One is to further enhance cosmopolitanism and to extend the circle of care to the entire globe. The second is to encourage the broad superficial reach of simplified messages. The technological features, e.g., “share” buttons and ease of scrolling, create the temptations (Lanier, 2011): to keep spreading the information without due diligence, to glance and skip, to create short messages rather than to engage in a nuanced conversation. Digital technologies left to their own devices have the power to erode rationality and analysis that were developed by the print medium. The third bias is to enable the return to tribalism: digital technologies facilitate the creation of echo chambers, in which different views are dangerous

and unsought. The tribe decides to boycott fake news. The fourth potentiality is that immersion in digital media eventually leads users to question their choices and behaviours.

We see a difference between this transition and the previous ones. In the transitions to literacy, to print, and to electric communication technologies, humanity was able to *grow* in accordance with the bias of the medium: morality was codified; the elite began to distinguish itself by virtue of its intellect rather than such virtues as honor; rules of logic were agreed upon; group identity was expanded. In the case of digital technologies, their predominant biases, if left unchecked, may lead to decline instead of growth; they contain vices which a thinking person should avoid, and they have painful social consequences:

1. The internet allows for a kind of faux democracy. Articles and opinions can be posted with little or no cost. This allows readers to encounter a variety of perspectives that broaden one's vision of the world. On the other hand, it also allows rumors and disinformation to have equal status as accurate information, and audiences reinforce their prejudices to their hearts' delight.
2. The internet, much like the newspaper, encourages quick jumping from post to post. This discourages nuanced arguments, even though the most important problems are complex and require nuance. It encourages demagoguery.
3. Electronic media is constantly changing and threatens to engulf previous media such as books, newspapers, radio, and television.
4. Like the contemporaries in Lope de Vega's play, observers now point out that there is an ocean of information, "and most of it is covered in froth" -- the information glut postulated by Neil Postman. Censorship has been replaced by oversaturation as a means of keeping the public ignorant.
5. Algorithms have enabled micro-targeting, which makes consumers more vulnerable.
6. Reposting encourages viral misinformation.
7. When materials are published online, they reach consumers directly, bypassing publishers, editors, curators, teachers, and parents. In the digital environment, there are no filters between the consumer and the froth, the glut, the algorithm.

How can citizens adjust to using electronic media while developing their personal potential and creating a good society?

Such an adjustment will not be unprecedented; Rozhdestvensky (1967) summarized the efforts required during the transitions between communication strata:

1. The transition from stage to stage in each case is, so to speak, a triumph over a language crisis, achieved either by imparting a new medium on the language (writing, print) or by changing the ways of treating the language (in particular the change in education tools - school, literary language and grammar).
2. Transition from stage to stage does not mean setting aside the achievements of previous stages, but includes them in the new whole and reconstructs the whole (barbaric languages as related to the

civilized ones, oral unregularized languages as related to regularized oral and unregularized written ones, dialects which have no separate writing systems as related to the literary language and "dead" languages).

3. Transition from stage to stage always includes conscious and purposeful influence of people on a segment of the language process, eventually changing and restructuring the process as a whole". (pp. 299-300)

In light of these regularities, the next section of the paper considers how we can best take advantage of digital technology and use it for growth instead of allowing a decline.

### **Conscious and purposeful resistance strategies**

Historical precedent suggests that societies are not merely shaped by their media but can actively adapt to them. We submit that in the digital context, this adaptation requires explicit cultivation of four capacities.

#### *1. Awareness of cognitive biases*

First, we propose that school curricula help students explore their own cognitive biases. Our experience teaching persuasion classes shows that most textbooks include logical fallacies, but neglect cognitive biases; students, on the other hand, report that ability to identify and describe their own cognitive biases is the most helpful tool they learn. Information about cognitive biases is popularized on youtube, in Psychology Today magazine, on Wikipedia, in Tversky and Kahneman's foundational work on cognitive biases, etc.; however, it is not a staple of communication and persuasion curricula or of general education seminars; it remains a province of specialized courses in psychology, economics, or cognitive science. Because digital technologies provoke some irrational behaviors in all users, all users should be made aware of the heuristics that drive our irrational decisions.

#### *2. Recognition of nuances*

Secondly, we propose that school curricula should emphasize nuance. Currently, schools do teach the skill of looking at all sides of the argument; however, this approach is dampened by the emphasis on "taking a position and defending it", and by using debate as a method of persuasion. In a debate, participants are asked to win, using whatever techniques work. Nuance rarely leads to victory. Issues involving multiple parties with multiple interests are not best decided by winning. Instead, complex problems are best resolved by compromise. 140 characters in an Instagram post are not a good vehicle for nuance. The study of literature and rhetoric should be.

#### *3. Restraint and analysis*

Thirdly, in the digital environment, users should be making a conscious and purposeful effort to become their own "dialecticians". In Plato's dialogue *Cratylus*, Socrates proposes the role of "dialectician" as a person who evaluates the work of a master and makes a judgment whether the work is well done.

“Socrates: But who then is to determine whether the proper form is given to the shuttle? the carpenter who makes, or the weaver who is to use them?

Hermogenes: I should say, he who is to use them, Socrates. [...]

Soc. And who will be best able to direct the legislator in his work, and will know whether the work is well done, in this or any other country? Will not the user be the man?

Hermogenes: Yes.

Soc. And this is he who knows how to ask questions?

Hermogenes: Yes.

Soc. And how to answer them?

Herm. Yes.

Soc. And him who knows how to ask and answer you would call a dialectician?

Herm. Yes; that would be his name.

A dialectician under the onslaught of information and manipulation must develop restraint and communicate thoughtfully. Dialecticians should not immediately react to what they read or hear; they should ask questions and research issues when necessary. They should be able to evaluate sources. They should beware of the bias of the digital medium towards broad but superficial reach, fast clicks, shallow thinking and tribalism.

#### 4. Self-reflection, self-care, awareness of choices and of design pressures

Warning labels and age restrictions are common on such products as tobacco, alcohol, recreational drugs, and firearms; driving requires a license in addition to being of age. Social media, however, so far do not come with similar warnings or licences. Conversely, many parents introduce their young children to this addictive substance and pay for the children's unlimited access to it. This creates a responsibility vacuum. Based on the results of formal and informal surveys in our classes, representatives of Gen Z are unanimous in saying that the responsibility lies with the user.

Is this level of awareness achievable, considering the pressure of digital technologies? To assess if users of digital media are aware of the need to exercise analysis, restraint, and responsibility, we conducted a survey among educated adults, college students, and college-bound high schoolers (see Appendix 1). The overwhelming majority of respondents demonstrated awareness of temptations, and most of them listed useful skills they use to curb those temptations, even though they admitted to occasional lapses. Interestingly, only 14 of 53 high schoolers and college freshmen reported that they learned those skills in school; 3 out of 23 Bachelor's degree holders, 5 out of 43 Master's, and 5 out of 23 PhD's learned them from school. We conclude that schools currently do not include enough focus on digital media pitfalls. Our survey was limited to a highly educated population; further research among blue-collar populations is needed.

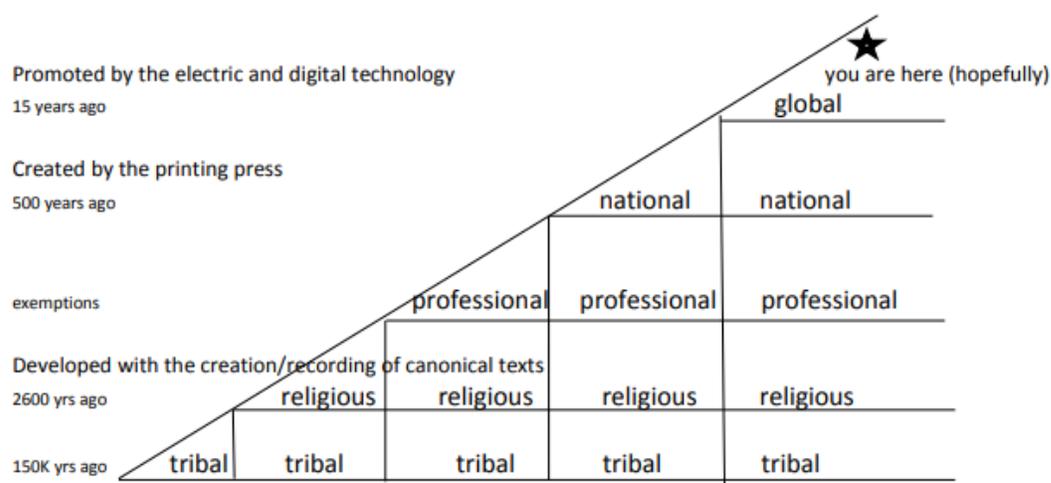
The question becomes what resources are available for schools to reshape their curriculum to teach these essential skills.

### **Accumulative approach**

We would like to propose the accumulative framework to guide the reshaping of school curricula.

According to Yuri Rozhdestvensky, who developed the accumulative approach to human culture, morality, and communication (1996), each new stratum does not negate the previous ones. People at every stage carry all the qualities of the previous stages; it is possible for “lower” qualities to override “higher” level reactions if the stimulus is strong enough; however, the presence of higher level reactions in the repertoire provides us with more options and with a possibility of a more sophisticated response.

For example, Rozhdestvensky’s description of the levels of morality can be presented in this graphic form (Polski, 2014):



According to this approach, a person on the global level of morality (i.e., the person whose circle of care includes the planet and its inhabitants) still carries the national, religious, and family allegiances and is circumscribed by his or her professional obligations. These allegiances may occasionally be in conflict, but they may also reinforce each other.

Similarly, additions of new communication technologies enhance some aspects of the previous communication strata. E.g., digital technologies, though their easy global reach, can help widen the users’ circle of care and make the world more cosmopolitan - this development builds on the electric stratum and is consistent with the bias of the digital medium. However, the erosion of rationality is also consistent with the bias of this medium. Therefore, the appearance of digital technologies, by de-emphasizing nuance and emphasizing impulsive behaviours, makes it necessary to enhance the study of long forms of argument, which are more suitable for printed texts.

Such a study in the digital age becomes more effective when the benefits of long printed forms are explicitly contrasted with the benefits of fast, short digital forms. The digital stratum can enrich the printed stratum by highlighting its value: “here are the things print can achieve for you which the digital forms cannot; use them! And here are the things digital forms can achieve for you, for which print is not suitable; use them!” The intellectual repertoire is thus widened. In return, the skills which are trained in the printed stratum can mitigate the dangers of the digital stratum. This approach may also be summarized graphically:

Future				????		????
25 years ago				Electronic		awareness, responsibility*
75 years ago:			electric	electric 2		cosmopolitanism
500 years ago:		printed	printed 2	printed 3		rationality
5000 yrs ago:	written	written 2	written 3	written 4		religious canons
50,000 yrs ago:	oral	oral 2	oral 3	oral 4	oral 5	intellect, morality

Expansion of Polski and Gorman, 2011: 266; based on Rozhdestvensky, 1996

\*not a given; will require a purposeful intervention

We recommend that school curricula include exercises where students compare their experiences working with long printed forms and working with short digital forms.

### Conclusion

It is natural to panic and to see the worst while caught in the middle of a transition. Natural selection, after all, favors the neurotic, who are alert to danger. However, looking at the large-scale patterns of human development, we see not only the accumulation of dangers, but also the addition of improvements. In light of the previous argument, the presence of rationality and cosmopolitanism can be utilized to drive the development of humanity towards awareness and responsibility, instead of towards the return to tribalism and emotional knee-jerk behaviors.

At East-West University, Chicago, we developed a Reader with exercises to help our students navigate their digital existence and maintain control over their faculties. Please note that excerpts used in the reader are available for educational use only. The Reader can be accessed here, or authors can be contacted at mariap@eastwest.edu

<https://docs.google.com/document/d/e/2PACX-1vRk6ZSaerWd15DTpMiiKGjhPb6gsUaUsPkdG7GhKi9F1PNgHPdOo7cDXB5J1iH1U8ufjDF4Jburr6u0/pub>

This paper does not argue that awareness, restraint, and responsibility have already become a defining feature of digital media users. It does argue that the *need* for restraint and responsibility has become the figure on the ground of digital media, to use McLuhan's (1989) tetrad terms. As awareness is brought to these qualities, we have the ability to develop them through personal effort and through school curricula, battling against the pressures of the medium. Only with this conscious effort will we be able to mitigate the natural bias of digital media. The study of cognitive biases, now lagging behind logical fallacies in rhetoric classes, will greatly contribute to furthering this development. Literature classes can enhance the recognition of nuance. With time and practice, restraint and responsibility have the potential to take place in human intellectual repertoire, along with rationality, cosmopolitanism, and emotional sophistication.

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## Appendix 1: the survey

The survey asked the following questions:

1. What platforms do you use? Mark all that apply

- Whatsapp
- Instagram
- Facebook
- Snapchat
- Twitter
-  LinkedIn
-  Youtube
-  Search engines (bing, google, etc.)
-  Other? Please add.

2. In YOUR OWN use of these platforms, do you practice the following:

- Analysis (e.g. research the truth and bias of posts)
- Restraint (e.g. refrain from sharing or commenting)
- Responsibility (e.g. post what you consider truly important, not trivial)

3. Please give one or two examples of using these qualities!

4. Do you feel that you should practice these qualities

- More
- Less
- You are just on target?

5. Where did you learn these qualities?

- At school
- At home
- Just by living life
- other - please explain

6. Do your peers influence you to post or follow anything?

- Yes - please explain
- No - please explain
- Occasionally - please explain

7. In your use of the internet and social media, do you experience temptations? If yes, what kind?

- to share a post without checking its truth
- To believe the post/video
- Other: please add
- To keep scrolling / watching
- To respond immediately with your first reaction

8. What do you do when temptation comes?

9. Your level of education:

- In high school
- Graduated from high school
- College freshman/sophomore
-  Bachelor's
-  Master's
-  Ph.D.

- College junior/Senior

Other advanced degrees: MD, JD, etc.

*Results:*

53 respondents were Generation Z: high schoolers, college freshmen and sophomores; 62 were adults holding Master's and Doctoral degrees; 34 people were college Seniors and college graduates with a Bachelor's degree. Almost all of them reported using some combination of restraint, analysis and responsibility! Only four respondents did not mark any of the three qualities.

Some respondents use social media for their engagement with social issues, and interpret "responsibility" as being responsible for the improvement of society, e.g. *"I post for my online business Pollution Solutions Co. and I need to make sure all the facts I post on social media are accurate. I consider my content important because it talks about the harmful side effects of single use plastics"; "Posting about social issues, rather than what I had for lunch"; "Lately I have erred toward my controversial truth regarding racism and politics and social order"; "I keep my personal life out of my social media life"; "With everything that was happening with YouTube drama and with BLM, a lot of things were probably going to be fake, and you have to learn how to differentiate fake posts, and I'm constantly posting about BLM"; "recently i've been using the platform i have on these apps to share as much information as i can about social issues and local protests". "I voice that I am against murdering unborn babies."*

Others maintain peace by the opposite approach: not commenting or sharing anything political or controversial: *"Never respond to political posts. People don't want your opinions, only want people to agree with them or they attack"; "I have refrained from responding to ignorant comments"; "I don't share political opinions on my pages"; "Not forwarding Trump-bashing."; "Not posting stuff just to aggravate others"; "I stay away from political and religious debates. I donate money when I see a campaign for a good cause"; "If I see something I disagree with I usually will resist the urge to leave a comment"; "If I don't have anything nice to say, I stay quiet".*

76 people (49.03%) are happy with their level of restraint, analysis and responsibility, and 68 people (43.87%) want to practice those qualities more. Is this glass half full or half empty? Are the 49.03% deluded about themselves? A closer look at comments shows that respondents do put a significant effort into their use of digital media.

Highschoolers, college freshmen, Masters and Ph.D's alike research their sources: *"doing lateral reading- finding out who is behind a website, article, etc. & identifying what their bias may be." "I try to fact check things I hear from my friends that have a big impact on their opinions"; "When someone in my social circle posts calls to action (for example about donating to a specific charity or organization) I immediately go to that organization's website to read their mission statement and/or stated political agenda before deciding whether or not to engage or donate. I try to be wary of people who do not provide relevant links to outside sources in the description when advocating*

*on social media in general”; “Look for the information source, Google the facts if they sound too sensational or simply too partial. Share only verified by me sources/facts.”; “I track the news about the stock market everyday but I do not believe in one news. I research many sites and sources while making analysis.”*

Many say they take time to reflect on posts and on their own drafts. Comments included: *“Since I know that whatever I post/comment will stay on the internet forever, I always try to make sure that whatever I post/comment is something I will be proud of years later”. “Sometimes I will type a comment, but wait a few minutes before posting. I usually end up deleting the comment instead of posting.”; “ I have caught myself typing a post or reply on Facebook and then deleting it after asking myself what purpose the post or reply would truly serve”; “Restraint: when someone dumb posts something trying to sound smart and I don’t say anything rude”; “I usually spend long time entering one comment, making sure I am 100% satisfied with what I enter. Often I end up discarding my comment before I post it. I rarely post anything on social media, when I do, it means it is very important for me.”; “I often very carefully consider the implications of what i’m saying online— i know that regardless of whether or not what i’m saying is visible to future employers, the words and content i choose to share can have a very real and legitimate impact on the people seeing them. i’ve definitely had to stop myself from posting heated responses in comment section arguments, but when i do choose to reply to someone i disagree with, i always make sure i’m being as polite and informative as possible.”*

Therefore, the glass can be interpreted as half full: educated adults and college-bound young users know the dangers and have skills to avoid them. This of course does not guarantee full and constant success, but full and constant success in human affairs is an unrealistic expectation in any case. Even the most accomplished users lapse occasionally. We see two opportunities here: 1. To strengthen the skill to minimize own lapses; 2. To develop a skill to determine if another person’s post is a lapse, a “heat of the moment” reaction which can be ignored, or a thoroughly considered crystallized position..

33 respondents learned to exercise restraint, analysis and responsibility at school. 50 (also) learned it in their families. This is a cause for optimism: schools have included these skills in their curriculum, and adults are teaching their young about important 21-century survival skills.

Nine respondents said they do not experience any temptations. For the others, interestingly, the biggest temptation is to keep scrolling. It seems that scrolling through pet videos, friend’s pictures, political bashings, and epic fails has taken the place of channel surfing for some people.

Respondents admit to other temptations, too: eating, shopping, *“making fun of people as the jokes/sarcasm are sometimes funny but sometimes mean”*, indiscriminate sharing, reacting, and believing without due reflection. 24 out of 93 people who left comments admitted to “falling for it”,

among them 3 Ph.D's, 5 Master's, 2 Bachelors, 7 college sophomores and 7 highschoolers. Only college Seniors did not admit to giving in to temptations on social media :). This indicates in our effort to develop resistance skills, we are up against very real pressures.

On the bright side, half of the respondents provided enlightening and uplifting examples of ways to overcome these temptations. Respondents reported three sets of skills:

1. physically move away, put down the phone, turn off the phone, have a glass of water; *"Usually cut myself off from going deeper into the rabbit hole after an hour"*
2. Think, research, factcheck. An especially touching comment was *"I try to do my own research on it or I ask my mom about it"*. One respondent said: *"When I was first introduced to search engines and social media, I would jump on every 'exposé', get excited, and share it thinking that 'now we know the truth!' With time I learned to factcheck, and now follow only a few select authors whose opinion I have come to respect"*.
3. Think of possible consequences: *"I think about how spreading misinformation is harmful, even if the misinformation supports something I believe to be true"; "I usually take a deep breath and think If what I'm about to do can come back to haunt me later"; "I usually stop to make sure it's something I want to share to others and I even hesitate to like some posts just in case the information is wrong or in some way offensive to someone else"; "With everything I post, I assume my boss could read or see it." When something makes me angry I always want to respond but I stop myself because of possible arguments with strangers and because of potential career damaging thing they can arise in the future"*

The survey did not ask specifically where the respondents learned those skills, but it is appropriate to extrapolate from the answer to q.5: specific skills which help to deal with temptations must have been learned in the same places where people learn analysis, restraint and responsibility: at school, at home, and by making mistakes and drawing conclusions.

While we realize that respondents might unconsciously or consciously exaggerate their strengths, the thoughtfulness of comments allows us to conclude that most educated users do reflect on their behaviors and apply resistance skills. As mentioned earlier, different demographics need to be surveyed for further data.

## **Appendix 2: Disputation between The Skeptic and The Believer**

*The Skeptic:* Your theoretical framework is not very scientific. Unlike say McLuhan, I am suspicious of evaluations of media. (In the same way I am suspicious of Postman.) I prefer description. We have a tendency to evaluate the effects of a technology, to say that the effects are good or bad, or these are the good and these are the bad effects. Sometimes the value of the effects seem obvious, but the effects of important technologies never are. First of all, there are no agreed criteria to evaluate many of the effects. Let's take industrial farming. On the one hand, it is efficient, at least in the short run, It makes money for its investors. It increases and decreases the

price of food, again at least in the short run. On the other hand, it decreases the gene pool, it impoverishes the soil, and it causes misery to fellow creatures. Our evaluation of the costs and benefits is moral rather than scientific. Moreover, technological effects are complex, and even the most astute observer can only see them partially. The automobile has affected the environment, affected family structure, affected the economy, affected city design, affected our use and very concept of time. A more thoughtful person could add to the list. We can measure emissions, we can measure miles traveled, but we can only measure the effect on the extended family in the most general way. And how do we measure the freedom gained from closeness lost?

*The Believer:* not everything that can be measured is important, and not everything important can be measured (“not everything that can be counted counts, and not everything that counts can be counted” - William Cameron). You are right that many effects of different technologies are hard to quantify. But do we necessarily need quantification for the suffering of animals in industrial farms, for freedom gained from closeness lost, or for self-reflective powers of digital media users? This paper works within the qualitative framework: we issued a probe and began to look at people’s experiences (yes, using a survey to collect/access their experiences); we observed that many, from highschoolers to Ph.D’s, are explicitly conscious of their responsibility; we inferred that the bias of the digital medium contains the potential to awaken responsibility further. Exact measurement may not be possible, but may also not be necessary.

*The Skeptic:* Are we really becoming more cosmopolitan? Trump? Brexit? Nationalist governments in Turkey and Western Europe?

*The Believer:* Progress is rarely lineal; most often “two steps forward one step back” describes our path more accurately. It is fair to expect pushback from the forces that are being left behind, like nationalism; therefore, Trump, Brexit and nationalist governments will continue to be an important factor. However, while on the level of governments we see some countries clinging to nationalism, on the level of individuals we see mobility and flexibility, e.g. people holding dual and multiple citizenships. The trends that included creation of the UN, the EU, NATO, and NAFTA and Paris Climate Accord might of course reverse completely, but will they? Rozhdestvensky (1996) argues that an individual’s circle of care is circumscribed by the reach of the individual’s communication technologies. Loyalty to family and tribe corresponds to oral communication, loyalty to a religion corresponds to the existence of written canons, loyalty to a nation corresponds to the existence of printed materials in the language of the nation. McLuhan (1969) famously said that electricity turned the world into a global village. With the internet connecting the globe even more, the move towards cosmopolitanism has a strong chance of succeeding even against the pushback of the nationalist forces.

*The Skeptic:* Even in academia I wonder if we are responsible. E.g.: Social constructionism, which is not only intellectually suspect but also has noxious political effects.

*The Believer:* Verily, academia is not exempt from flaws and excesses. Many thinkers have pointed out the intolerance and prejudice which damage open inquiry on university campuses, e.g. Pinker (2018), Peterson (2018), Haidt and Lukianoff (2019), al-Gharbi (2018). Just like other users of

digital media, academics are not uniform in their level of responsible behavior. Access to digital media allows everyone, including responsible and irresponsible members of academia, to amplify their voices. Luckily, there are members of academia who speak up for diversity of opinion, for civility and for critical inquiry; e.g., Heterodox Academy, of which Jonathan Haidt is the chair of the Board of Directors, or the recent open letter signed by 149 academics and public intellectuals that cautions against "an intolerance of opposing views, a vogue for public shaming and ostracism, and the tendency to dissolve complex policy issues in a blinding moral certainty [...] and disproportionate punishments instead of considered reforms." Academia has the potential to exercise its responsibility.

The issue under consideration is not whether irresponsible unreflective behaviors exist; the issue under consideration is whether we are developing awareness of them and tools to curb them.

*The Skeptic:* I could send you people on my Facebook feed which do not practice analysis or restraint. Are they typical?

*The Believer:* None of the ecological changes in communication technologies has ever encompassed 100% of humans. None of the changes were immediate. For example, while science and reason were making headway among a small elite during the Age of Enlightenment, populace at large remained superstitious and prejudiced (many still do). Similarly, restraint and responsibility are making headway now among a small elite; with time, they will become more widespread, and more tools will be made available in schools to practice them. Cognitive biases are being included in school curricula at the undergraduate level; with time, the topic might penetrate high school curricula, too.

*The Skeptic:* you presume most people want to be exposed to as many viewpoints as possible and the new electronic media allows for such exposure. I presume most prefer to be confirmed in their prejudices and the new electronic media allows them to indulge themselves to their heart's content. When I was a child, media was fairly homogenized. Now we have all kinds of choices, and some of the choices dismiss the other, and so all kinds of people talk about "fake news" even as they consume it.

*The Believer:* You are right in pointing out that most people will indulge their confirmation bias. This is precisely why education should emphasize the familiarity with cognitive biases and ways to counter-balance them.

*The Skeptic:* Few people think they use media irresponsibly.

*The Believer:* True! See above: learning about our own cognitive biases will help us see our choices clearer and to be more responsible.