# Testimony

Anticipating June 13, 2021

## Editorial

After the calendar, the Sunday Liturgical Reading reflections are based on readings for the Eleventh Sunday in Ordinary Time. Tom Keene's poem is *Potluck with Jesus.* For more of Tom's poems, see http://www.tomkeeneandthemuse.com/index.php.

A Canadian scholar whom I have known for decades recently asked me whether I could write a book endorsement for the back cover of a volume he was finishing. It turned out to be a theological work that argues that the present state of Israel and its seizure of properties in Palestine are fulfillments of God's covenant promises to the Hebrew patriarchs. Having read the draft manuscript, I declined to write an endorsement. I mention this to emphasize the significance of the June 9, 12, & 13 item listed in the Calendar section below, the virtual delegations to a neighborhood in Jerusalem from which the Israeli government is expelling Palestinians.

One recurring theme in this newsletter is the ethical obligation to seek out the truth of important matters rather than be satisfied with facile opinions. Belief in a Creator God entails the conviction that the divine will can be approached, if not fully comprehended, in the realities of creation. The Creator endowed humans with the powers of observation and reason, as well as the obligation to use these powers. This makes science a calling, not merely an occupation. Consequently the trickery of populist appeal and false reporting is a serious problem. After the poem we have an essay by three young scholars who are developing Artificial Intelligence (AI) software to identify false reports and conspiracy theories. What they report reflects a whole new world, at least to some of us; and they even use a new and unfamiliar vocabulary in their discourse about that world.

**Calendar**

[Times are for the Central Time Zone.]

Tuesday June 8, 6:00pm (7:00pm ET), digital town hall "The Attack on State Voting Rights and the For the People Act," sponsored by the Environmental Defense Fund. Register at: https://www.mobilize.us/edfaction/event/392046/

Wednesday June 9, Saturday June 12, Sunday June 13, **OR** Wednesday June 16, each 1:00pm (11:00am Pacific Time; 2:00pm ET), virtual delegations to Silwan, the Jerusalem neighborhood resisting expulsion and home demolitions. The context is 70% of Palestinian residents having received eviction or demolition notices. Eyewitness Palestine is leading the virtual delegations in order to counter the Israeli tourist and archeology industries' effort to link the Bible stories of King David to the modern Israeli state. Each session is limited to 45 participants. Register at: https://secure.everyaction.com/PJNPkea3GEeB7sS4O0QF6A2

Wednesday June 9, 6:00pm-7:15pm, online "Migration, Climate change, and Fair Trade: How Are Farmers Faring in 2021?" Miguel Mateo Sebastian (Manos Campesinos, Guatemala). Register at: https://equalexchange.zoom.us/meeting/register/tJMtdOiupjIjHNNx7r6rcCa_GS mdjN5Yf9RE?eType=EmailBlastContent&eId=8d93e27a-42cf-4a24-bc6c-4c80407698c7

Wednesday June 9, 6:30pm, panel discussion "This is Who I am—Celebrating Transgender Voices," Alexis Rangel (National Center for Transgender Equality), Brianne Titone (Colorado State Representative), J.B. Levine (Jewish cantoral soloist), and others; sponsored by Anti-Defamation League: Austin, Mountain States, Plains States, Southwest, and Texoma Regions Register at: https://adl.zoom.us/webinar/register/WN_9uUlQiJwS-iUF_o2ZPn8ZQ

Wednesday June 9, 8:00pm (7:00pm Mountain Time), Pax Christi El Paso virtual meeting: Discussion of *Fratelli Tutti*, paragraphs 198-224, pp. 115-28, "Dialogue of Friendship in Society." Contact Pat Delgado at: phdelgado3583@gmail.com

Monday June 14, 11:00am-12:15pm (12:00pm-1:15pm ET), Zoom webinar "Religious Discrimination During Crises: A Global Perspective," Mahan Mirza

(Ansari Institute), Susan Hayward (Harvard Divinity School), Sabrina Dent (Americans United for Separation of church and State), and Knox Thames (Institute of Global Engagement), moderated by Jason Klocek (U.S. Institute of peace). Register at:
https://notredame.zoom.us/webinar/register/9716221209079/WN_Nskq_3oDR3
OxervFm0pc5g?utm_source=sfmc&utm_medium=email&utm_campaign=06.14.2
021+Religious+Discrimination&utm_term=https%3a%2f%2fnotredame.zoom.us%
2fwebinar%2fregister%2f9716221209079%2fWN_Nskq_3oDR3OxervFm0pc5g&ut
m_id=510662&sfmc_id=16334564

Thursday June 17, 6:30pm, "Seeds of Peace: The Case for Nuclear Disarmament," Ira Helfand (Physicians for Social Responsibility). Contact Pax Christi Little Rock for the Zoom link: paxchristilr@gmail.com.

Thursday June 24, 6:00pm (7:00pm ET) online "Seeds of Hope for Our Planet: Thomas Berry and the Great Work," Joe Mitchell (Earth & Spirit Center). Register at: https://justfaith.org/june-24th-webinar-with-fr-joe-mitchell/

Saturday July 10, 1:30pm (12:20pm MT), Pax Christi Texas state conference, part 2. Presentation by R. Khari Brown (Wayne State University): "Religion and Black Lives Matter," followed by Q & A. Some members expressed the wish to visit and catch up after the program. Save the date; link information will be forthcoming.

Tuesday July 13, 6:30pm-Thursday July 15, 8:00pm, *Laudato Sí and the U.S. Catholic Church. A Conference Series on Our Common Home*, sponsored by Catholic Climate Conference and Creighton University. Addresses by Blasé Cardinal Cupich (Archdiocese of Chicago), Maureen Day (Franciscan School of Theology), Bishop Joseph Tyson (Diocese of Yakima, Washington), and Sister Ilia Delio, osf (Villanova University).
Complete schedule: https://www.creighton.edu/catholicclimate/schedule/
Register at:
https://reg.abcsignup.com/s_reg/reg_registration_maintenance.aspx?ek=0036-0013-440150ea4e6b4155aae2e37436d164b1

Friday July 30-Saturday July 31, 49th anniversary Pax Christi USA conference, online. Keynote Speaker: Olga Segura, author of *Birth of a Movement: Black Lives Matter and the Catholic Church*. Conference mass presider: Bishop John Stowe,

OFM Conv. SAVE THE DATE. For further information: https://paxchristiusa.org/2021/06/03/registration-opens-next-week-for-the-pax-christi-usa-national-conference-july-30-31-2021/

## Notices

**Pax Christi El Paso** has a new website: https://www.paxelpaso.org/

**The Healthcare Divide**, how pressure to increase profits and uneven government support are widening the divide between hospitals for the rich and the poor. A Frontline documentary: https://www.pbs.org/wgbh/frontline/film/the-healthcare-divide/

### Second Reading (2 Corinthians 5:6-10)

A casual reading of some of Paul's passages may lead one to the conclusion that he saw material as evil. This was not the case; in fact in his discourse about resurrection he insists that material bodies are to participate in some sense in a heavenly life. We should think of perspectives rather than material or non-material entities, since what we call *perspectives* are often what Paul is trying to get at. "We are always encouraged, then, and know that when at home in the body we are in exile from the Lord, for we live through faith, not through the seen" (2 Cor 5:6).

### Third Reading (Mark 4:26-34)

"And he spoke the word to them with many such parables, as they were able to hear…." The nature of Jesus' parables places responsibility for delivering the point with the hearer. It is similar to an experienced jurist reading a decision and, because of a knowledge of the history of precedents and familiarity with their application, sees many ramifications that most other people would not see. An expert in electronics will likewise see much more in a circuit board than would others. A musicologist hears much more to appreciate in the performance of a symphony than does the untrained ear. Indeed, a mature person will have more

difficulty being bored with everyday life than will a child. In that light, we can understand how a parable works.

"This is what the kingdom of God is like: Someone would throw seed on the ground and would sleep and rise night and day, and the seed would sprout and lengthen in a way one does not understand." Here we have a parable about parables, pertaining not to an individual but to a "kingdom." We do not know how the propensity to hear the word about the kingdom fruitfully develops, or how the sensitivity to moral reality emerges in the public. Individuals and groups who had not responded before suddenly do so. We ourselves do not understand how our own discoveries, and also our own blind spots, come about. But they are there in our very selves. "Like a grain of mustard, which is smaller than all the seeds on the earth when one sows it...."

## Poem

### Potluck with Jesus

When he came into our village contentions,
he asked the women to get up a potluck.

Bakers brought breads,
gardeners their goods,
householders their steaming stews.
We toasted and tasted ourselves
with homemade wines.

In his reach,
we felt in one another
his lighter than gravity,
electromagnetic touch,
finding us, binding us,
freeing us.

When he left,
he stayed in our memories
of how we beheld one another then

and how he continues with us now
in our potlucks.


Tom Keene and the Muse
May 28, 2021


**Meme Warfare: AI countermeasures to disinformation should focus on popular, not perfect, fakes[1]**

By Michael Yankoski, Walter Scheirer, Tim Weninger[2]

Despite several alarming headlines in the press last year like "Deepfakes are coming for American Democracy" (Hwang and Watts 2020), the sophisticated, artificial intelligence- (AI-) generated images and videos called "deepfakes" didn't

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[1] *Bulletin of the Atomic Scientists*, May 13, 2021 (online).

[2] Michael Yankoski is a doctoral candidate at the University of Notre Dame's Kroc Institute for International Peace Studies. His dissertation research explores the intersection of anthropogenic climate change, virtue theory, strategic peacebuilding, and human population displacement.



Walter Scheirer is an assistant professor in the Department of Computer Science and Engineering at the University of Notre Dame. His research is in the area of artificial intelligence, with a focus on visual recognition, media forensics, and ethics.



Tim Weninger is an associate professor in the Department of Computer Science and Engineering at the University of Notre Dame. His research is at the intersection of social media, artificial intelligence, and graphs.

end up influencing the presidential election (Simonite 2020), and they haven't yet shaped major world events. Rather, as with the case of the viral video that appeared to show Joe Biden wearing a wire on the presidential debate stage (it was a shirt crease), cruder manipulations and simple misrepresentations can be far more effective and influential.

Researchers are only just beginning to understand the threat posed by multimedia (that is, visual and audio) disinformation. From QAnon conspiracy theories to Russian government-sponsored election interference, social media disinformation campaigns are a daunting front in online life, and identifying these threats amid the posts that billions of  social media users upload each day is a challenge. To help sort through massive amounts of data, social media platforms are developing AI systems to automatically remove harmful content primarily through text-based analysis. But these techniques won't identify all the disinformation on social media. After all, much of what people post are photos, videos, audio recordings, and memes.

Academic researchers, including us, have worked to develop AI systems with the technological sophistication to detect faked media items such as photos and videos (Yankoski, Weninger, and Scheirer 2020). In our analyses of disinformation in multimedia content, what we have found is that sophisticated faked content—often called deepfakes—just isn't the most pressing problem. Through our ingestion platforms and media analysis engines, what we are seeing is not the proliferation of fake images, videos, and audio that are so real as to convince someone of something untrue, but rather the proliferation of narratives that emotionally reaffirm a belief that an audience already has (Theisen et al. 2020). Deepfake manipulations on the Internet are niche. The real challenge in using AI to detect multimedia disinformation lies in understanding much more crudely produced content: It is the meme that social media companies and policymakers need to worry about.

**Memes and the power of shallow.**

In 1976, the evolutionary biologist Richard Dawkins needed a term to explain how cultural artifacts evolve over time as they spread across society, replicating through imitative acts (Dawkins 2016). He coined the term "meme," a portmanteau of the ancient Greek word for imitation, "mimeme," and the English word "gene." Since then, memes have become an essential form of visual communication. Anything a person can conceive of and express visually is potential meme material.

Memes generally are a kind of shallowfake. In contrast to increasingly realistic, AI-generated deepfakes, these are manipulations that range in production value from plausible to obviously fake. In other words, they're easy to make. Shallowfakes can even be original images or videos that someone has simply relabeled as depicting something else or has subtlety edited to change the perception of the content, for example, by slowing down the video frame rate (Denham 2020). What is important is that they replicate and spread as rapidly as possible.

Shallowfakes are much better for meme making than deepfakes, which strive for realism. For shallowfakes like memes, it is often the case that the less they correspond to reality, the more effective they can be in spreading online and even swaying human behavior.

Take the saga of a Reddit group called r/wallstreetbets. In late January 2021, the "Redditors," as the platform's users are known, sparked an astronomical rise in the stock price of GameStop. A video game store popular in the early 2000s (Eavis 2021), GameStop had lost traction as shoppers and gamers moved online. For a few wild days in midwinter, however, the price of GameStop stock, which had hovered in the single-digit dollar range for much of 2020, rocketed to triple digits and closed at $347 on January 27 (Yahoo Finance 2021). Hedge funds that had placed bets against GameStop hemorrhaged money and the entire incident prompted congressional inquiries (Flatley and Wasson 2021), a Securities and Exchange Commission investigation (Newmyer and Zapotosky 2021), and numerous lawsuits.

A big part of the r/wallstreetbets story are the memes that Redditors used to generate an enormous response and to coordinate action by playing off of people's emotions and beliefs. For example, one meme depicted a financial commentator who had a negative analysis of GameStop as a beggar. "On the way to the grocery store, found Andrew Left at his new job," the post's caption read. While, in this case, the Redditors weren't pushing disinformation, their tactics perfectly illustrate the power of shallowfakes and memes to drive behavior. Another, perhaps more alarming, example of memes serving as powerful tools for disinformation has been anti-vaccination messaging during the pandemic (Buts 2021). Social media users have posted memes questioning the value of COVID-19 vaccines, saying, for example, that the flu vaccine hasn't eliminated the flu. Others have linked the vaccines to autism. Such meme-based disinformation campaigns could reinforce existing divides in vaccine support (Funk and Tyson 2021).

**AI for detecting disinformation.**

Researchers have put significant resources into the creation of sophisticated AI systems to rapidly detect threats as they emerge in online social media networks. There are text-based hate speech detection systems (Peace Tech Lab; Woolley and Howard 2018; Technologies & International Development Lab n.d). One of us (W.S.) is developing sophisticated image manipulation detection algorithms to detect doctored images (Theisen et al. 2020; Yankoski, Weninger, and Scheirer  2020). Deepfake video detection systems have the capacity to both detect irregularities, such as noise inconsistency in the video itself (Guarnera, Giudice, and Battiato 2020; Verdoliva 2020) as well as differences between the affective cues contained in the audio versus the video components of a media item (Mittal et al. 2020).

The problem is that these technologies are often isolated from one another, and thus relatively incapable of detecting meme-based disinformation campaigns. While the technological advances in each of these various areas are laudable, researchers have yet to produce AI systems sophisticated enough to detect coordinated campaigns designed to manipulate how groups of people feel about what they already believe, which is the motivation for campaigns involving memes.

This kind of AI analysis is on another level entirely from all existing systems and technologies. This other level is semantic analysis, a methodology aimed at mapping the meaning of the disinformation campaigns themselves. For semantic analysis, it isn't enough to detect whether a post contains a manipulated image, faked audio clip, or hate-speech. Algorithms need to be able to identify coordinated multimodal (i.e., text / image / video) campaigns deployed across platforms so as to inflame the emotional landscape around an audience's beliefs. AI systems will need to understand history, humor, symbolic reference, inference, subtlety, and insinuation. Only through such novel technologies will researchers be able to detect large-scale campaigns designed to use multimedia disinformation to amplify or magnify how a group of people feel about their preexisting beliefs.

This is a much more difficult task than simply identifying manipulated multimedia, particular words in a hate-speech lexicon, or new instances of a known "fake news" story. Rather this requires developing the capacity for machines and algorithms to better grasp the complex and multifaceted layers of human meaning making. Systems capable of parsing the complicated layers of

meaning deployed in shallowfakes like memes represent the very cutting-edge of AI systems and are the forefront of the foreseeable future of technological development in this space. In many ways this represents the transition from existing AI perceptual systems to nascent AI cognitive systems. The enormous difference in complexity and computing power between these cannot be overstated.

**Just the beginning.**

  Systems capable of detecting deepfakes don't actually do much to help counter the proliferation of disinformation campaigns deploying shallowfakes designed to magnify and amplify an audience's preexisting beliefs. Likewise, systems focused on identifying problematic text also are inadequate to the task of parsing memes and shallowfakes. But imagine for a moment that AI researchers are able to develop semantic analysis systems, and that it becomes possible to detect these coordinated disinformation campaigns as they occur. What then? AI won't be enough. The social media companies and policymakers will need to look at interventions, including software development, media literacy and education, and even new social norms. In other words, society needs a broad-spectrum approach to sufficiently prepare for the disinformation campaigns that are becoming increasingly common.

  Such an approach should include the following elements: a) policy-level responses that more carefully consider the complex relationship between disinformation, democracy, and freedom of speech; b) information-sharing agreements designed to coordinate the sharing of information across government agencies as well as social media platforms for the rapid identification of and deceleration of disinformation campaigns in real time; c) media literacy education campaigns that educate and prepare users to identify trustworthy sources of information and fact-check or further analyze sources of information that seem questionable.

  Some responses to disinformation might involve not technological fixes to remove content, but rather techniques to help users know what they're consuming online. App developers should consider developing a "disinformation engagement metric" similar to screen-time counters and app-specific engagement statistics trackers. These would help users know more about the volume of disinformation that they are encountering. There are multiple hurdles related to this, but as the threat of emotional manipulation through

disinformation continues to grow, policymakers and developers alike will need to develop new tools to help users navigate a rapidly evolving landscape.

As more of the human population gains reliable and fast access to the internet, an increasing percentage of people will become susceptible to campaigns intended to manipulate, magnify, and amplify their preexisting notions and emotional dispositions. Realizing when this is occurring doesn't just require technological systems capable of identifying deepfakes, but rather systems with the ability to identify coordinated shallowfake campaigns across platforms.

But beyond the necessary advances in technology, we also need a multi-faceted response that integrates policy-level decisions, content moderation strategies, information sharing agreements, the cultivation of new social norms around disinformation sharing online, the development of new disinformation consumption/interaction tools at the software-level, and even social initiatives intended to help people interact in civic life rather than just in an online forum.

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## Links

Pax Christi International
http://www.paxchristi.net/

Pax Christi U.S.A.
http://www.paxchristiusa.org

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http://www.paxchristisa.org

Marianist Social Justice Collaborative
www.msjc.net

Sisters of Charity of the Incarnate Word, International JPIC Committee
http://saccvi.blogspot.com/

San Antonio Peace Center
http://www.sanantoniopeace.center

Texas Catholic Campaign to End the Death Penalty
www.txccedp.org

Dialogue Institute of San Antonio
www.thedialoginstitute.org/san-antonio/

Climate Change
www.creation-care.com

Catholic Books Review
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