CPA CHARTERED PROFESSIONAL ACCOUNTANTS CANADA

Identifying and mitigating bias and mis- and disinformation

PAPER 3

The third in a four part series discussing ethical leadership in an era of complexity and digital change.

February 2022

CPA Canada Foresight
REIMAGINING THE PROFESSION.

ICAS

IFAC International Federation of Accountants®

IESBA®

21-2275

ABOUT CPA CANADA

Chartered Professional Accountants of Canada (CPA Canada) works collaboratively with the provincial, territorial and Bermudian CPA bodies, as it represents the Canadian accounting profession, both nationally and internationally. This collaboration allows the Canadian profession to champion best practices that benefit business and society, as well as prepare its members for an ever-evolving operating environment featuring unprecedented change. Representing more than 220,000 members, CPA Canada is one of the largest national accounting bodies worldwide. cpacanada.ca

ABOUT IFAC

IFAC (the International Federation of Accountants) is the global organization for the accountancy profession dedicated to serving the public interest by strengthening the profession and contributing to the development of strong international economies. Comprised of 180 members and associates in more than 130 countries and jurisdictions, IFAC represents more than 3 million accountants in public practice, education, government service, industry and commerce.

Over four decades, IFAC has represented the global profession and supported the development, adoption, and implementation of international standards that underpin the contributions of today's global accountancy profession. IFAC has maintained a long-term approach to building and strengthening a global accountancy profession that supports transparent, accountable, and sustainable organizations, financial markets, and economies. ifac.org

ABOUT ICAS

ICAS is the global professional body for Chartered Accountants. We educate, examine and lead, enabling excellence whilst always working for the wider public good. All 23,000 ICAS members have earned our world-class CA designation of Chartered Accountant, the qualification that's shaped an international business community spanning industries and continents, full of local heroes and corporate leaders. And we continually foster the bonds between our members, so CAs at all stages of their careers can learn from shared experience and connect their ambitions to success. For further information please visit icas.com

ABOUT IESBA

The IESBA is an independent standard-setting board that develops, in the public interest, high-quality ethics standards and other pronouncements for professional accountants worldwide. This includes the *International Code of Ethics for Professional Accountants (including International Independence Standards)*, which establishes ethics requirements for professional accountants.

The board also supports adoption and implementation, promotes good ethical practices globally, and fosters international debate on ethics issues faced by accountants. ethicsboard.org

Background and acknowledgements

This paper is the third of four thought leadership pieces developed by Chartered Professional Accountants of Canada (CPA Canada) to build on a collaborative exploratory paper and global roundtable event held jointly with the Institute of Chartered Accountants of Scotland (ICAS) and the International Federation of Accountants (IFAC), entitled *Ethical Leadership in an Era of Complexity and Digital Change*.

The exploratory paper, a summary of the event, and an on-demand recording are available on the IFAC Knowledge Gateway and on the International Ethics Standards Board for Accountants (IESBA) technology initiative's focus page. The paper was also informed by diverse stakeholder views gathered through the IESBA's broader technology initiative.

This post-event series of papers more fully investigates the key themes presented in the exploratory work, and leverages the event delegate discussions and recommendations, to offer practical guidance for professional accountants (PAs), professional accountancy organizations (PAOs), and other interested stakeholders, as our profession evolves to address changing stakeholder needs while continuing to meet our public interest responsibilities. The series contributes to the work being undertaken throughout the profession to re-think the role of PAs as ethical leaders in this era of complexity and digital change.

Identifying and Mitigating Bias and Mis- and Disinformation begins by looking at the high-stakes impact that bias and mis- and disinformation have on trust and objective decision-making. Next, it recaps key messages from delegates at the global roundtable event and other outreach sessions, before considering a layered approach to meeting relevant professional obligations. It revisits some of the themes from the prior paper to frame technology as a double-edged sword that can be used to both exacerbate and fight against the challenges of bias and mis- and disinformation. Finally, guidance is provided as to practical implications for the profession, both at the level of professional accountancy organizations and individual PAs.

In this paper, consistent with the other papers in the series, opportunities and challenges are discussed that are relevant to all PAs, whether in business, public practice or the public sector. This era of complexity and digital change has broad-reaching implications for the profession as it determines the way forward.

The other papers in the series, released throughout 2021 and 2022, cover the following interconnected, but distinct, topics:

- complexity and the professional accountant
- technology is a double-edged sword with both opportunities and challenges for the accountancy profession
- mindset and enabling skills – a competence paradigm shift (coming soon)

Identifying and Mitigating Bias and Mis- and Disinformation was developed by CPA Canada members Brian Friedrich (IESBA member and chair of IESBA's Technology Working Group) and Laura Friedrich (IESBA technical advisor) under the direction of Gord Beal, vice-president, Research, Guidance and Support, at CPA Canada and with valuable insights provided by James Barbour, director, policy leadership at ICAS, IESBA technical advisor, and member of IESBA's Technology Task Force; Christopher Arnold, head of SME/SMP and research at IFAC; and Ken Siong, senior technical director at IESBA. Todd Scaletta, CPA Alberta's senior vice president Foresight and Research, and Greg Owens, International Panel on Accountancy Education member, also contributed significantly to the direction and ideas discussed in the paper.

The team is grateful for the important guidance and feedback provided by peer reviewers for this paper: Rosemary McGuire and Taryn Abate on behalf of the CPA Canada Foresight initiative; David Clark, Diane Jules, Kam Leung and Sundeep Takwani on behalf of the IESBA's Technology Working Group; Gabriella Kusz, IFAC's principal for Strategic Initiatives; and Hironori Fukukawa, professor at Hitotsubashi University, IESBA member and member of IESBA's Technology Task Force.

Feedback and comments are enthusiastically welcomed – please send to foresight@cpacanada.ca.

Table of Contents

Part I: The stakes are high

> Without facts, you can't have truth; without truth, you can't have trust; without trust, you can't do anything. Without trust you break humanity.[1]
>
> — *2021 Nobel Peace Prize winning journalist, Maria Ressa*

The impact of mis- and disinformation

Imagine being part of senior management of the Coca-Cola Company and having to defend against a viral story that Dasani water was being recalled because it contained "clear parasites."[2] Or what if you were the owner of a small restaurant in London, and your revenue suddenly dropped by 50 per cent because of an online article claiming that you were serving human meat and had been arrested with nine bodies in your freezer.[3] Or imagine being a Kenyan judge, and being targeted by a coordinated

1 Maria Ressa in "Countering digital disinformation: Maria Ressa wins Nobel Peace Prize" (August 10, 2021), online (myITU – International Telecommunication Union): <https://www.itu.int/en/myitu/News/2021/10/08/13/48/Maria-Ressa-Nobel-Peace-Prize-Countering-digital-disinformation>.

2 Coca-Cola Bottling Company United, "No Recall on Dasani" (April 14, 2016), online: <https://cocacolaunited.com/blog/2016/04/14/no-recall-on-dasani/>.

3 BBC News, "Restaurant hit by 'human meat' fake news claims" (May 18, 2017), online: <https://www.bbc.com/news/newsbeat-39966215>.

and lucrative disinformation campaign on Twitter to sway public opinion against a project you support, with influencers' posts bordering on incitement and advocacy of hatred.[4]

An even more chilling example

In 2018, the *New York Times* reported that:

Members of the Myanmar military were the prime operatives behind a systematic campaign on Facebook that stretched back half a decade and targeted the country's mostly Muslim Rohingya minority group. The military exploited Facebook's wide reach in Myanmar, where it is so broadly used that many of the country's 18 million Internet users confuse the Silicon Valley social media platform with the Internet. Human rights groups blame the anti-Rohingya propaganda for inciting murders, rapes and the largest forced human migration in recent history.[5]

It was discovered that hundreds of Myanmar military operatives engaged in "coordinated inauthentic behaviour" via seemingly independent popular entertainment, beauty and information pages, but were spreading propaganda on the pages. Months later, Facebook began removing related accounts and pages, as well as Instagram accounts, but admitted that they had been too slow to act.[6]

4 Mozilla, "Fellow Research: Inside the Shadowy World of Disinformation-for-hire in Kenya" (September 2, 2021), online: <https://foundation.mozilla.org/en/blog/fellow-research-inside-the-shadowy-world-of-disinformation-for-hire-in-kenya/>.

5 New York Times, "A Genocide Incited on Facebook, With Posts From Myanmar's Military" (October 15, 2018), online: <https://www.nytimes.com/2018/10/15/technology/myanmar-facebook-genocide.html>.

6 Meta, "Removing Myanmar Military Officials From Facebook" (August 28, 2018), online: <https://about.fb.com/news/2018/08/removing-myanmar-officials/>.

For clarity, terms are used as follows in this paper:

Misinformation is information that is false, but unintentionally so (for example, resulting from error or a lack of diligence in fact-checking).

Disinformation, on the other hand, is where someone is intentionally trying to deceive (for example, propaganda designed to deliver an outcome). This includes when information is deliberately used out of context or is purposefully narrowed by including desired elements and omitting others to present a misleading impression or support a false claim. This type of deception is sometimes referred to as mal-information,[7] but for the purposes of this paper, we'll consider it as part of disinformation.

For users of information, both mis- and disinformation can cause harm (as they are neither reliable nor trustworthy), but disinformation intends to cause harm.

In today's world, both mis- and disinformation continue to have significant negative effects on the decision-making of individuals, organizations and communities within society, with the majority of news consumers seeing "fake news" as a serious problem.[8] This is not limited to information that is political (or politicized, such as disinformation regarding vaccines). Financial mis- and disinformation is also an issue. Back in 2017, an American Institute of Certified Public Accountants (AICPA) survey reported:

> ...widespread awareness about the issue of fake financial news. Almost 3-in-5 Americans (58 per cent) believe that fake news is a serious threat to their financial decision making, with more than half of those (33 per cent) saying the threat is very serious.[9]

7 See, for example, Claire Wardle & Hossein Derakhshan, *Information Disorder: Toward an interdisciplinary framework for research and policy making* (Strasbourg: Council of Europe, 2017), online: <https://rm.coe.int/information-disorder-report-november-2017/1680764666> at 5.

8 Deloitte, "Majority of news consumers see 'fake news' as a big problem today" (June 10, 2021), online (Deloitte Insights): <https://www2.deloitte.com/us/en/insights/industry/technology/study-shows-news-consumers-consider-fake-news-a-big-problem.html>.

9 AICPA, "Fake Financial News is a Real Threat to Majority of Americans: New AICPA Survey" (April 27, 2017), online: <https://www.aicpa.org/press/pressreleases/2017/fake-financial-news-is-a-real-threat-to-majority-of-americans-new-aicpa-survey.html>.

But what does this mean for PAs? In our role as trusted advisors to employers, clients and other stakeholders, we add credibility to information we are associated with, and that comes with a responsibility to ensure that we're part of the solution and not part of the mis- and disinformation problem.

Bias threatens objectivity

As PAs, we are required to maintain objectivity, which includes exercising professional or business judgment without being compromised by bias, among other factors.[10] When it comes to cognitive bias, this is no easy feat. Bias, by its very nature, is often applied unconsciously. Recent revisions to the IESBA Code highlight types of bias that PAs should be aware of when exercising professional judgment:

- **Anchoring bias**, which is a tendency to use an initial piece of information as an anchor against which subsequent information is inadequately assessed.
- **Automation bias**, which is a tendency to favor output generated from automated systems, even when human reasoning or contradictory information raises questions as to whether such output is reliable or fit for purpose.
- **Availability bias**, which is a tendency to place more weight on events or experiences that immediately come to mind or are readily available than on those that are not.
- **Confirmation bias**, which is a tendency to place more weight on information that corroborates an existing belief than information that contradicts or casts doubt on that belief.
- **Groupthink**, which is a tendency for a group of individuals to discourage individual creativity and responsibility and as a result reach a decision without critical reasoning or consideration of alternatives.
- **Overconfidence bias**, which is a tendency to overestimate one's own ability to make accurate assessments of risk or other judgments or decisions.
- **Representation bias**, which is a tendency to base an understanding on a pattern of experiences, events or beliefs that is assumed to be representative.

10 See, for example, International Federation of Accountants (IFAC), *2021 Handbook of the International Code of Ethics for Professional Accountants* (New York: IFAC) [IESBA Code] at para R112.1 (https://eis.international-standards.org/standards/iesba/2021); Chartered Professional Accountants of British Columbia (CPABC), *Code of Professional Conduct* (Vancouver: CPABC, October 2020) [CPABC Code] at para 202.2 (https://www.bccpa.ca/member-practice-regulation/act-bylaws-code-of-professional-conduct); and Institute of Chartered Accountants of Scotland (ICAS), *ICAS Code of Ethics (including International Independence Standards)* [ICAS Code] at para R112.1 (https://www.icas.com/professional-resources/ethics/icas-code-of-ethics). Note that the professions in Canada are provincially regulated, so the Code of one of the larger jurisdictions is referenced for illustration. The Codes of other provincial bodies are substantially equivalent with respect to the elements referred to.

- **Selective perception**, which is a tendency for a person's expectations to influence how the person views a particular matter or person.[11]

A discussion about the addition of bias-related information to the Code and other related revisions arising from the IESBA's Role and Mindset project is presented in installment 11 of IFAC's *Exploring the IESBA Code* series, which provides practical examples of how these biases might be observed.[12]

Historically, humans have relied on unconscious biases to help us make quick decisions in times when resources are limited and outcomes are uncertain. For example, our tendency to be more trusting of people who closely resemble ourselves, which might combine aspects of several of the above biases, was a useful trait for survival in ancient times. Tversky and Kahneman, the researchers who originally coined the term 'cognitive bias,' likened several biases to mental shortcuts or heuristics: "People rely on a limited number of heuristic principles which reduce the complex tasks of assessing probabilities and predicting values to simpler judgmental operations."[13] This might increase efficiency of decision-making, but recall the cautionary words of innovation author Dave Gray, quoted in the first paper of this series: "...when you make the complex simple, you make it wrong."[14] Indeed, Tversky and Kahneman found that: "In general, these heuristics are quite useful, but sometimes they lead to severe and systematic errors."[15]

PAs are not immune to bias. In fact, philosopher Erik Angner proposes that individuals who are more knowledgeable might find it more difficult to overcome bias.[16] This is where professional competence and due care[17] come in, recognizing the diligence in mindset needed to ensure we can apply our skills to uncover facts and evidence. With respect to the impact of cognitive biases in the audit context, ACCA explored the interplay between bias,

---

11 See, for example, *IESBA Code* and *ICAS Code* at para 120.12 A2, *ibid*.

12 IFAC, "Exploring the IESBA Code Installment 11: The Role and Mindset Expected of Accountants—A Focus on Bias" (October 2020), online: <https://www.ifac.org/knowledge-gateway/supporting-international-standards/publications/exploring-iesba-code-installment-11-role-and-mindset-expected-accountants-focus-bias>.

13 Amos Tversky & Daniel Kahneman, "Judgment under Uncertainty: Heuristics and Biases" (1974) 185:4157 Science 1124, online: < https://www.jstor.org/stable/1738360 > at 1124.

14 Dave Gray, "Complicated vs. Complex" (2009) Communication Nation, online (blog): <http://communicationnation.blogspot.com/2009/11/complicated-vs-complex.html>.

15 *Supra* note 13.

16 Erik Angner, "Epistemic Humility—Knowing Your Limits in a Pandemic" (2020) Behavioral Scientist, online: <https://behavioralscientist.org/epistemic-humility-coronavirus-knowing-your-limits-in-a-pandemic/>.

17 See, for example, *IESBA Code* subsection 113; *CPA BC Code* Preamble at 6; and *ICAS Code* subsection 113, *supra* note 10.

objectivity and professional skepticism.[18] The ACCA report argues that "...a new approach to professional skepticism is needed if expectations of further increases in audit quality are to be met"[19] and offers suggestions for auditors and standard setters alike. Among the suggestions is that "Auditors need to plan and execute their audits differently in order to mitigate the effects of these unconscious biases" and that "Other stakeholders in the financial reporting supply chain also need to be aware of their own cognitive biases," including considering how cognitive biases might impact perceptions regarding audit quality.[20]

Bias and mis- and disinformation are a potent mix

Bias and mis- and disinformation are distinct concepts, but they compound each other's impacts in at least a few key ways:

- Objectivity is required to determine if "information" we're presented with is reliable: when bias hampers objectivity, we might accept false information or discount true information. Ask yourself: are you more likely to trust information you receive if it is written by someone of the same race, nationality or gender as yourself? What about university, organization, profession or employer affiliation?
- Confirmation bias in particular can make us more prone to discounting true information that is contrary to our beliefs, and accepting mis- or disinformation as true if it supports our beliefs.
- The sheer volume of data and information (in entities, society and individual lives) makes it more difficult and time-consuming to detangle fact from falsehood. This, in and of itself, creates a compounding impact that could make us more reliant on biases that might cloud professional judgment.

18 ACCA, *Banishing bias? Audit, objectivity and the value of professional skepticism* (London: ACCA, May 2017), online: <https://www.accaglobal.com/content/dam/ACCA_Global/Technical/audit/pi-banishing-bias-prof-scepticism.pdf>.

19 *Ibid* at 4.

20 *Ibid*

Part II: Views from the field

During the roundtable event and other global outreach discussions,[21] a number of key themes have emerged from discussions with stakeholders:

PAs are responsible for the reliability of information we use, develop and disseminate

- PAs are prohibited from being associated with information that is false or misleading.[22]
- PAs have a public interest responsibility,[23] which requires that we do not disseminate falsehoods, and that we seek to curb mis- and disinformation where we can.
- The requirements for PAs to comply with the fundamental principles of integrity, professional competence and due care, and objectivity, and to exercise professional judgment and have an inquiring mind when applying the conceptual framework[24] underscore our responsibilities in elevating the quality, credibility and reliability of information.

Human bias is normal, but awareness of bias and then addressing it is key

- Bias exists in each of us and, by extension, in our organizations. As such, bias should be de-stigmatized and accepted as a fundamental human trait – though it does need to be challenged and addressed.
- The most critical – and often most challenging – step is identifying bias in a situation.

---

21 See, for example, IESBA Technology Working Group, *IESBA Technology Initiative Phase 1 Final Report* (New York: IFAC, February 2020), online: IFAC <https://www.ethicsboard.org/publications/iesba-technology-working-groups-phase-1-report> [IESBA TWG]; Brian Friedrich & Laura Friedrich, "Ethical Leadership in an Era of Complexity and Digital Change: Event Highlights" (May 12, 2021) IFAC Knowledge Gateway, online: IFAC <https://www.ifac.org/knowledge-gateway/building-trust-ethics/discussion/ethical-leadership-era-complexity-and-digital-change-event-highlights> [Friedrich].

22 *IESBA Code* at paras R111.2 and 200.5 A2; *CPABC Code* at para R205; *ICAS Code* at paras R111.2 and 200.5 A2, *supra* note 10.

23 *IESBA Code* at para 100.1 A1; *CPABC Code* Preamble at 4; *ICAS Code* at para 100.1 A1, *ibid*.

24 *IESBA Code* and *ICAS Code* section 120, *ibid*.

- The roles we perform within the profession can also have a bearing on how we identify and respond to bias. For example:
  - Auditors are trained in assessing management bias, so the concept of bias is well understood in that context. Focusing on management bias might, however, turn the spotlight away from the need to identify and mitigate an auditor's own bias, which might be reflective of prior experience with a particular client or the results of prior audit procedures.
  - PAs who don't have audit experience (and the resulting focus on management bias) might not be as familiar with identifying and evaluating bias in others.
  - For PAs in all roles, biases might become ingrained through the use of prescribed procedures, practices, templates or standards of the PA's organization or firm that are relied on without being further questioned.
- In recent years, more attention is being paid to bias in the context of equality, equity, diversity and inclusion in the workplace[25] (for example, in the context of hiring or promotion practices).
- Stereotypically, PAs in traditional accounting roles are sometimes presumed to have an inherent bias toward risk aversion, which could impact estimates being made under uncertainty. Whereas this form of bias might be seen as beneficial in managing risk, it might also be interpreted by stakeholders as PAs more frequently being "nay-sayers" or putting up roadblocks. Demonstrating balance, effective communication, and, as needed, educating stakeholders about views and rationale is important to ensure PAs are seen as effective and valued voices at the table.

Bias in computer systems is distinct from, but compounded by, human bias

- A key benefit of becoming aware of bias through examining machine learning outputs is that the bias comes into focus and can therefore be addressed. Revealing bias in data sets exposes how people think (or thought and made decisions) because it is normally these sorts of data sets that systems train on. Remember that data – biased or not – depicts what is happening (or has happened, in the case of historical data), but this clearly doesn't always equate to what *should* happen.

25 See, for example, Institute of Management Accountants (IMA) & CalCPA, *Diversifying U.S. Accounting Talent: A Critical Imperative to Achieve Transformational Outcomes* (Montvale, NJ: IMA and CalCPA, February 2021), online: <https://www.imanet.org/insights-and-trends/the-future-of-management-accounting/diversifying-us-accounting-talent-a-critical-imperative-to-achieve-transformational-outcomes>.

- When PAs develop, implement and use automation and AI-enabled technologies, it is important to consider both human bias (e.g., interpretation of output) and the biases being perpetuated in the data sets upon which these systems are developed and trained. Additionally, it is important to consider inherited bias when the system was first programmed, and biases that might have been introduced when data was initially labelled by humans (or other systems). An understanding of the range of ways bias can be introduced in systems will help us identify and understand the threats to objectivity and how they can be safeguarded against.
- Perhaps counterintuitively, it can be perfectly acceptable to rely on a biased data set, provided that the user recognizes the bias, makes judgments and accounts for it appropriately, and then uses the data accordingly. It's all about ensuring that the data used is fit for the decision-making purpose for which it is being relied upon.
- Both AI systems and humans are prone to bias, but perhaps by working together we can remove bias from machines to the point where machines can help overcome human bias and increase overall objectivity in decision-making.

Managing mis- and disinformation requires honing existing professional competence and developing new skills

- As humans, we are naturally predisposed to trust others.[26] But PAs are also trained to apply professional skepticism and an inquiring mind[27] in the context of professional judgment; honing and applying these skills are more necessary than ever.
- To apply professional skepticism and an inquiring mind effectively, PAs need real-world, hands-on, cross-disciplinary experience that is strengthened by active collaboration with others in diverse situations.
- Information overload can cloud judgment; PAs need to be able to distinguish what is simply "noise" and get to the underlying facts and information upon which decisions can be made.

---

26 See, for example, Roderick Kramer, "Rethinking Trust" (June 2009) Harv Bus Rev, online: <https://hbr.org/2009/06/rethinking-trust>.

27 Under the IESBA Code, having an inquiring mind applies to all PAs when applying the IESBA Code's conceptual framework to comply with the fundamental principles; exercising professional skepticism applies to PAs who, when undertaking audit, review, and other assurance engagements, and includes a critical assessment of evidence. Similarly, the *International Education Standards* include the following requirements: IES 4 part (a)(i): Apply an inquiring mind when collecting and assessing data and information, and IES 3 part (c)(ii): Apply professional skepticism through questioning and critically assessing all information – online IFAC: <https://www.ifac.org/system/files/publications/files/Handbook-of-International-Education-Standards-2019.pdf> [IFAC].

- PAs are typically trained to find answers, but it's important to shift that perspective toward asking the right questions first, which also helps detect unconscious bias and identify mis- and disinformation.
- For the next generation of PAs – such as those entering the profession today – who might well have no concept of the world before online social media and the power of the internet, there's a continuing challenge to focus on bias mitigation and objectivity skills (as set out in the *International Education Standards* [IESs]).[28]

There is a market for credibility

- Stakeholder needs for objective evaluation and recommendation extend well beyond traditional financial reporting and auditing, and build more broadly on our roles as trusted advisors acting in the public interest. This represents a growing opportunity to bring objective credibility across broad roles in the context of real issues being faced by organizations.
- Strong international standards provide consistency across the profession.[29] Their principles-based nature enables adaptation and flexibility as new technologies and services emerge, but additional guidance is needed to ensure the continued consistency of interpretation and application of the standards where requirements are deliberately less prescriptive.
- Transparency drives trust; open communication in understandable language is essential in being seen as providing reliable information.
- PAs bring objectivity, critical evaluation and communication skills to help distinguish opinion or assumption from fact, and provide reliable information on which decisions can be made; this can challenge mis- and disinformation in a way that provides a more neutral and balanced perspective to help reduce the divisiveness that results from one-sided thinking.

Firm culture helps shape the profession

- The IESBA Code states that "To the extent that they are able to do so, taking into account their position and seniority in the organization, accountants are expected to encourage and promote an ethics-based culture in the organization."[30]

---

28 See the IES 3 – Professional Skills – requirement to "Identify the potential impact of personal and organizational bias" and the IES 4 – Professional Values, Ethics and Attitudes – requirement to "Apply techniques to reduce bias when solving problems, informing judgments, making decisions and reaching well-reasoned conclusions", *ibid IFAC*.

29 See, for example, IFAC, *International Standards: 2019 Global Status Report* (New York: IFAC, 2019), online: <https://www.ifac.org/system/files/publications/files/IFAC-International-standards-2019-global-status-report.pdf>.

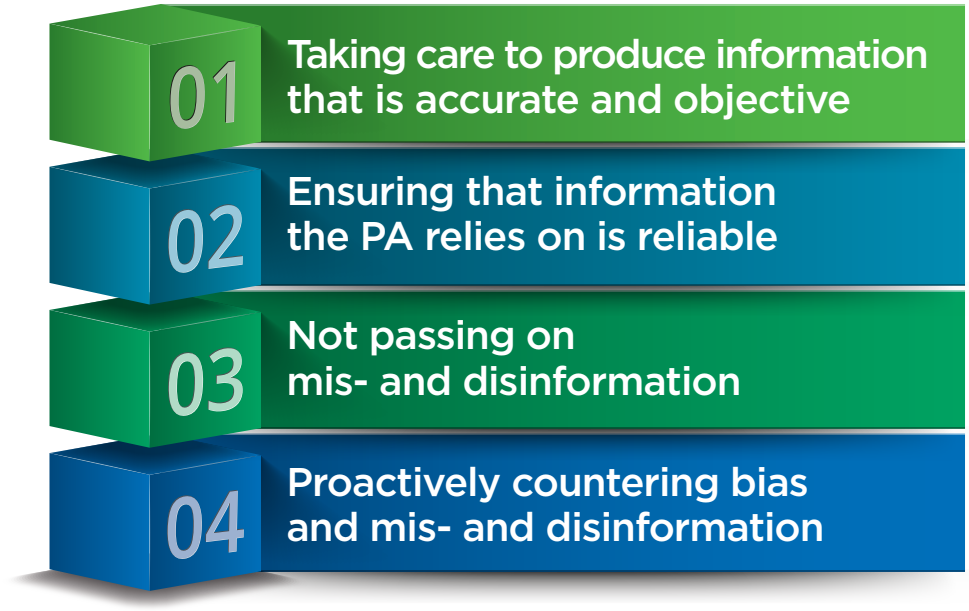
30 *IESBA Code* at para 200.5 A3; see also *CPABC Code* Preamble at 5; ICAS Code at para 200.5 A3, *supra* note 10.

- The International Auditing and Assurance Standards Board's International Standard on Quality Management 1 (ISQM 1), includes enhanced requirements regarding the firm's commitment to quality through its culture. For example, ISQM 1 now addresses the firm's public interest role; the importance of professional ethics, values and attitudes; the responsibility of all personnel for quality; and quality in the context of the firm's strategic decisions and actions.[31]
- Because many new and aspiring PAs train in firms and the leadership in the firms is made up predominantly of PAs, these firms have a significant and lasting impact on the culture across the profession. The leadership in firms need to carefully establish organizational culture; diversity, inclusion, equality and equity should be lived core values, not just buzzwords.
- Diversity of opinion matters; not only should team members be encouraged to speak freely, but leaders should also establish an environment that supports meaningful contribution of different perspectives. Team members should feel free to challenge earlier decisions based on new information, as well the ideas of colleagues – including more senior colleagues.
- Workload volumes, high turnover, fee pressures and expectations of immediate response times interfere with the ability to take the time needed to reflect upon actions and decisions.
- Firms need to continue not taking on or retaining clients that fail to demonstrate trusted ethics principles; the more this happens, the more it empowers other firms to do the same and benefits the public interest. This also provides leverage to PAs working to improve ethical culture internal to organizations.

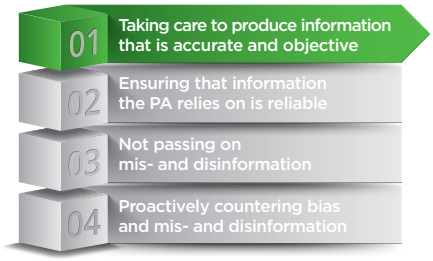
31 IFAC, *2020 Handbook of International Quality Control, Auditing, Review, Other Assurance, and Related Services Pronouncements* (New York: IFAC) [IAASB Handbook], online: < https://eis.international-standards.org/standards/iaasb/2020> at ISQM1, para 28. Note that the standard is effective December 15, 2022.

Part III: A layered approach to meeting professional obligations

Meeting professional obligations for objectivity, integrity, professional competence and due care, and public interest responsibilities in the face of bias and mis- and disinformation can be thought of in terms of layers:



Layer 1: Taking care to produce information that is accurate and objective



The first layer of responsibility is the one that is generally most under the PA's control. To maintain trust in the profession, it is foundational that the information produced by PAs be accurate and objective, in order to be reliable.

To do so, PAs:

- apply professional competence in developing information, with proper regard to standards of practice
- apply due care along with professional skepticism/an inquiring mind in evaluating and assessing facts and data that are incorporated into the information being produced
- exercise professional judgment in a manner that considers the purpose for which the information will be used, the context of the situation, and the audience for which the information is intended or is reasonably foreseeable[32]
- consider the level of complexity and uncertainty of the situation,[33] and reflect these appropriately in the communications that result, such as by advising stakeholders, where appropriate, of the limitations of the information produced, such as the inherent uncertainty of estimates or predictions[34]

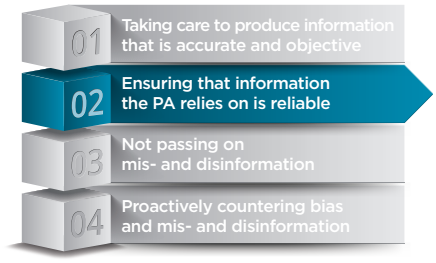
But as professionals, PAs also rely on a great deal of information in making decisions and providing advice. This requires going beyond the information that PAs generate themselves.

32 See, for example, the requirements in Section 220 (Preparation and presentation of Information) of the *IESBA Code* and the *ICAS Code*, *supra* note 10.

33 CPA Canada, ICAS, IFAC & IESBA, *Complexity and the professional accountant: Practical guidance for ethical decision-making* (Toronto: CPA Canada, June 2021), online: <https://www.cpacanada.ca/en/foresight-initiative/trust-and-ethics/complexity-guidance-ethical-decision-making>.

34 See, for example, IESBA Code and ICAS Code at para R113.3, *supra* note 10.

Layer 2: Ensuring that information the PA relies on is reliable



Given the way communications and information works these days, we're constantly facing a barrage of information in both our personal and professional lives for which we need to determine reliability by distinguishing fact from falsehood, conjecture or merely opinion. But what makes something 'true' and how do we know?

Edelman's 2021 Trust Barometer[35] includes the concept of having good "information hygiene," which is measured based on four dimensions. The first three dimensions relate to maintaining objectivity as we evaluate information (the fourth dimension will be discussed shortly):

i. regularly engaging with news (staying informed)
ii. avoiding information "echo chambers" (by instead engaging with differing points of view)
iii. verifying information (using multiple information sources and going to the original source where possible)

These types of habits can help support PAs in demonstrating professional competence, as we bring critical thinking and professional skepticism/ an inquiring mind to our work. They also require due care, as we need to ensure that we expend appropriate time and effort in evaluating information. The more important the decision, the greater the resources that should be committed to ensuring the reliability of information underlying the decision.

It is, however, also important to acknowledge the inherent limitations in our ability to determine what is factual.[36] We tend to rely on, in the first instance, what we know to be true. But how much do we actually "know" – in other words, have personal knowledge of – and how much is simply our reliance on information from sources that we've deemed trustworthy? You likely 'know' that plants produce oxygen through photosynthesis, for example, but have you ever seen it happen? Philosopher John Hardwig coined the term "epistemic dependence" to refer to our reliance on others' knowledge.[37]

---

35 Edelman, Edelman Trust Barometer 2021, online: <https://www.edelman.com/sites/g/files/aatuss191/files/2021-01/2021-edelman-trust-barometer.pdf> at 28.

36 Supra note 34.

37 John Hardwig, "Epistemic Dependence" (1985) 82:7 J Phil 335, online: <https://doi.org/10.2307/2026523>.

MIT Technology Review author Matthew Hutson further explains that "Knowledge [...] depends as much on trust and relationships as it does on textbooks and observations."[38] Hutson references, for example, the retraction in June 2020 of two academic papers on Covid-19 published in the *Lancet* and the *New England Journal of Medicine* as a result of questions around data integrity and undue reliance on data from one of the authors' companies that would not submit to independent audit.[39] This case provides a high profile example of what can happen when epistemic dependence is mishandled, and Hutson points out that "the rise of misinformation about issues like vaccines, climate change and COVID-19 is a direct attack on epistemic dependence, without which neither science nor society as a whole can function."[40]

Some of the recent medical misinformation occurred because in 2020 (at the start of the pandemic), the use of "pre-print academic papers" (i.e., papers published online before being peer-reviewed) dramatically increased in an attempt to provide more timely information to help mitigate the pandemic. However, as a result of this rush to make non-peer reviewed papers available, the benefits of an effective, long-established peer-review process (e.g., questioning methods, data gathering processes, data sources, etc.) were bypassed.

As a result, the scientific process was also called into question. Science is "messy" by nature; unfortunately, this messiness that normally happens in the confines of labs that have time to test and re-test hypotheses ended up playing out in the public forum, which led to credibility issues that usually would have been resolved via peer-review opportunities. If we lose the ability to trust what should be reliable sources, it undermines many things we think we know, regardless of context. This provides an even stronger case for critical evaluation and applying an inquiring mind.

Also, consider how much of what we know, or did know, has been amended. What is understood to be factual evolves over time as (i) more knowledge is gained, (ii) better information is available and (iii) more advanced tools and techniques are developed to test and prove hypotheses and/or confirm or disprove previous beliefs.

---

38 Matthew Hutson, "Why you don't really know what you know" (October 21, 2020) MIT Technology Review, online: <https://www.technologyreview.com/2020/10/21/1009445/the-unbearable-vicariousness-of-knowledge/>.

39 Charles Piller, "Who's to blame? These three scientists are at the heart of the Surgisphere COVID-19 scandal" (June 8, 2020) Science, online: <https://www.sciencemag.org/news/2020/06/whos-blame-these-three-scientists-are-heart-surgisphere-covid-19-scandal>.

40 *Supra* note 38.

To evaluate the reliability of information, PAs should:

- perform research to evaluate the authenticity and credentials of the person or organization making the claim. Can their claims be corroborated by other impartial, authenticated and credentialled individuals/organizations?
- consider what the information source's bias(es) might be – for example, who is paying for research being undertaken? What does the individual or organization disseminating the information stand to gain?[41] Consider also that the benefits might not be direct, but might instead accrue to related parties.
- pay close attention when relying on information presented by a media source and consider whether the information is news, commentary or pure opinion, and treat it accordingly. In addition, consider the political or ideological leaning of the media outlet.[42]
- determine how many authoritative, credible voices are supporting a position and if they are qualified in the specific field they are opining on. Mis- and disinformation spreaders often cite "impressive-sounding witnesses who apparently endorse the mis- or disinformation."[43]
- remember that fact-checkers are human too. As such, they might bring unconscious bias to their decisions as to what is "fact."[44] Although many situations can be traced to hard evidence, there is still room for error and interpretation at the margins.

As we go about the process of evaluating information to determine its validity, we must always remain aware of how our own biases are impacting our objectivity. Are we falling victim to overconfidence or confirmation bias, or forgetting to dig deeper to find information that hasn't been made immediately available to us? Achieving objectivity requires self-awareness and rational thought:

- Avoid "motivated reasoning,"[45] where we justify a position that we think is rational, but is actually being driven by what we want to be true.

---

41 See, for example, Jevin West & Carl Bergstrom, "Calling Bullshit" lecture series, online University of Washington: <https://www.callingbullshit.org/videos.html>.

42 AllSides.com, for instance, classifies various (predominately U.S.) media outlets in terms of their political leaning, online: <https://www.allsides.com/media-bias/media-bias-ratings>.

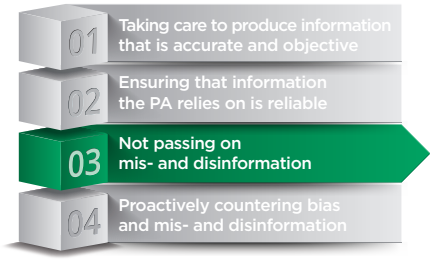
43 David Robson, "It's only fake-believe: how to deal with a conspiracy theorist" (December 2020) The Guardian, online: <https://www.theguardian.com/society/2020/nov/29/how-to-deal-with-a-conspiracy-theorist-5g-covid-plandemic-qanon>.

44 Organizations devoted to fact-checking can be helpful, such as those belonging to the International Fact Checking Network (https://www.poynter.org/ifcn/). In particular, consider the viewpoints of fact-checkers with different perspectives and leanings.

45 See, for example, Center for Audit Quality, Professional Judgment Resource (August 2014), online: <https://www.thecaq.org/wp-content/uploads/2019/03/professional-judgment-resource.pdf>.

- Practice "epistemic humility,"[46] knowing the limits of your knowledge and expertise.
- Be a 'scout' who seeks information, looks for blind spots and tests assumptions, rather than a 'soldier' who defends a position at any cost.[47]
- Avoid what psychologists call the "illusion of fluency." As we perform increasingly familiar tasks, we tend to monitor our performance less rigorously.[48] This can allow us to drop our guard.
- Calibrate evaluations by applying estimated probabilities.[49] Rather than just thinking in terms of what you believe is correct, also consider how sure you are. What likelihood would you assign to being correct (and therefore, what is the chance you might be wrong)? Be mindful to avoid overconfidence in your estimations. This helps avoid overreliance and promotes more realism about the potential for error.

Layer 3: Not passing on mis- and disinformation



In addition to ensuring that the information we rely on as PAs is trustworthy, we also need to apply the principles of integrity and due care to ensure that we don't share false or misleading information.

The fourth dimension of "information hygiene" in Edelman's 2021 Trust Barometer is:

iv. Avoid spreading misinformation, by checking the veracity of information before forwarding content to others.[50]

Even if it's not information that we plan to rely on, before disseminating information, it is important for PAs to take reasonable steps to ensure such information is not false or misleading. As PAs, we add credibility to information we are associated with, so recipients might not be as skeptical themselves as they otherwise would be if the information was received from a non-PA.

---

46 *Supra* note 16.

47 Joshua Rothman, "Why is it so Hard to be Rational?" (August 16, 2021) New Yorker, online: <https://www.newyorker.com/magazine/2021/08/23/why-is-it-so-hard-to-be-rational?mc_cid=ef802dd2da&mc_eid=8262db5bd5>.

48 *Ibid.*

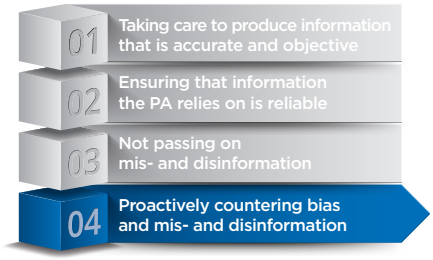
49 *Ibid.*

50 Supra note 35.

In other words, PAs are part of the epistemic dependence in society, and that brings a responsibility with it to apply both integrity and due care in addition to objectivity, as part of our public interest responsibility.

It is also important to understand that we can unwittingly reinforce false information simply by repeating it, even when we're just pointing out that it's false. A *Behavioral Scientist* article, for example, explains that when we repeat a falsehood – even if we're acknowledging that it's false – the repetition sears it further into peoples' minds: "A sense of familiarity can be mistaken for veracity."[51] To counter common misconceptions, a better approach might be to state only the factual information, and simply acknowledge that there is a misconception, rather than detailing what the misconception is. Of course, this approach might not be appropriate when explaining issues to employers or clients, where the expectation would be for more discussion around what was examined and what assumptions were evaluated and accepted or dispelled in reaching a conclusion. In many situations, transparency – within the bounds of confidentiality, of course – is beneficial in supporting the logic of a position taken or decision made.

Layer 4: Proactively countering bias and mis- and disinformation



Sometimes, just providing fact-checking can overcome bias and debunk mis- and disinformation and decrease their spread. The Journal.ie, a third-party fact checking partner for Facebook in Ireland, notes that: "In our experience, once a story is rated as false we have been able to reduce its future views by 80 per cent."[52]

51 Elizabeth Weingarten & Rosii Floreak, "Why We're All Likely Spreading Misinformation, and How to Stop" (October 27, 2020) Behavioral Scientist, online: <https://behavioralscientist.org/why-were-all-likely-spreading-misinformation-and-how-to-stop/>.

52 Alison McGuire, "Facebook Launches Third-party Fact-checking Partnership with the Journal.ie as Part of Referendum Integrity Effort in Ireland" (April 28, 2018) Irish Tech News, online: <https://irishtechnews.ie/facebook-launches-third-party-fact-checking-partnership-with-the-journal-ie-as-part-of-referendum-integrity-effort-in-ireland/>.

But fact checking alone doesn't always work. Confirmation bias is strong, and if an individual does not practice good information hygiene, it might be very difficult to convince them that their beliefs should be critically examined. People can "be rational and self-deceptive, because telling yourself that you are rational can itself become a source of bias."[53]

In some cases, more effective approaches might be to start by:

- establishing empathy, being non-confrontational and making the effort to understand why the individual believes the false information, rather than immediately engaging in trying to convince them otherwise
- asking what kind of evidence or other information would lead the other party to change their mind

Guardian writer David Robson explains that these types of techniques can help "pre-suade" individuals to be more open to messages by putting them in the right frame of mind.[54]

Using an individual's past experiences can help us understand where they are coming from. Perhaps even more importantly, shaping the conversation by asking the individual to reflect on personal experiences that run counter to the misinformation can help guide them to change their mind on their own.[55]

Ultimately, remember that as humans we hold beliefs and learn what we 'know' based principally on the information sources we trust, so the best way to help combat mis- and disinformation is to be a trusted source of information, and ensure that our own information hygiene is impeccable. The profession's value to stakeholders who hire and engage PAs is founded on trust based on our demonstration of the fundamental principles. We need to individually and collectively leverage both that inherent trust and our professional skills – such as problem solving and communications – to proactively counter mis- and disinformation.

53 *Supra* note 47.

54 *Supra* note 43.

55 See, for example, Caitlyn Finton, "Conversations on Polarizing Topics Are Possible. If You're Up for It, Here's How to Start" (November 9, 2020) Behavioral Scientist, online: <https://behavioralscientist.org/conversations-on-polarizing-topics-are-possible-if-youre-up-for-it-heres-how-to-start/>.

Part IV: Technology's double-edged sword in the context of mis- and disinformation

In the second paper in this series[56], technology was presented as a "double-edged sword" with both opportunities and challenges for the profession and individual PAs. In the context of mis- and disinformation, that metaphor holds true, as emerging technology both enables and helps defend against new types of false or deliberately misleading information.

Technology is being used to create and disseminate mis- and disinformation, and it can be incredibly hard to discern that it is false:

- Consider the creation of ever-more convincing audio and video deepfakes.[57] Although many are used for entertainment or political messaging, deepfake technology has evolved to the point where it is being used to, for instance, mislead financial professionals into releasing funds. In one case, the CEO of a UK energy company received both a phone call and an email from what he thought was his boss at the parent company.[58] Instead, it turned out to be an AI-generated voice that convincingly mimicked his boss' voice,

56 CPA Canada, ICAS, IFAC & IESBA, Technology is a Double-Edged Sword with both Opportunities and Challenges for the Accountancy Profession (Toronto: CPA Canada, December 2021), online: <https://www.cpacanada.ca/en/foresight-initiative/trust-and-ethics/technology-double-edged-sword>.

57 See, for example, Jordan Peele's deepfake of former U.S. President Barack Obama, online: <https://www.youtube.com/watch?v=cQ54GDm1eL0>; RepresentUs advertisements featuring deepfakes of Russian President Vladimir Putin and North Korean Supreme Leader Kim Jung Un, online: <https://www.youtube.com/watch?v=sbFHhpYU15w>; Creative Bloq's "14 deepfake examples that terrified and amused the internet", online: <https://www.creativebloq.com/features/deepfake-examples>.

58 Drew Harwell, "An artificial-intelligence first: Voice-mimicking software reportedly used in a major theft" (September 4, 2019) Washington Post, online: <https://www.washingtonpost.com/technology/2019/09/04/an-artificial-intelligence-first-voice-mimicking-software-reportedly-used-major-theft/>.

including his tonality, punctuation, and German accent. The executive wired €220,000 to an account as his 'boss' requested. When the fraudsters made another attempt and asked for an additional wire transfer, the CEO got suspicious and called his boss directly. While on the phone with his actual boss, the fraudster called on another line and the deception was uncovered.

In addition to attacks aimed at an organization, broader applications are also possible. For example, imagine the potential for:

— fraudulent gains from stock market manipulation if a deepfake 'news' video showed the CEO of a major corporation announcing a merger, a bankruptcy, or some operational crisis

— a virtual meeting between a management representative and the auditor of an entity where the management representative is actually a deepfake controlled by someone committing fraud

Concerns about deepfakes have led them to be described as an "epistemic threat".[59]

- AI-enabled text generators, such as GPT-3, are rapidly improving, and can now write blog posts, articles, poems etc., that convincingly mimic human styles and content.[60] Foreseeably, this technology could ultimately be capable of authoring text that can mimic a broad range of applications including business press releases, product announcements, and even annual reports. If used by bad actors, however, this could result in even greater levels of business-related mis- and disinformation and could lead to even wider uncertainty or lack of trust about information sources.
- Online search engines have the potential to feed confirmation and other forms of bias. The algorithms that profile each of us based on our online activity – that are meant to be helpful, as well as stimulate platform engagement – can significantly narrow the scope of information and opinions we are exposed to.[61]

59 Don Fallis, "The Epistemic Threat of Deepfakes" (August 6, 2020) Phil Tech, online Springer Link: <https://link.springer.com/article/10.1007/s13347-020-00419-2>.

60 See for example, OpenAI GPT-2 and GPT-3 projects, online: <https://openai.com/research/>; GPT-3, "A robot wrote this entire article. Are you scared yet, human?" (September 8, 2020) The Guardian, online: <https://www.theguardian.com/commentisfree/2020/sep/08/robot-wrote-this-article-gpt-3>; Will Heaven, "A GPT-3 bot posted comments on Reddit for a week and no one noticed" (October 8, 2020) MIT Tech Rev, online: <https://www.technologyreview.com/2020/10/08/1009845/a-gpt-3-bot-posted-comments-on-reddit-for-a-week-and-no-one-noticed/>.

61 See, for example, Jackie Snow, "Bias already exists in search engine results, and it's only going to get worse" (February 26, 2018) MIT Tech Rev, online: <https://www.technologyreview.com/2018/02/26/3299/meet-the-woman-who-searches-out-search-engines-bias-against-women-and-minorities/>; Fons Wijnhoven & Jeanna van Haren, "Search Engine Gender Bias" (May 26, 2021) Frontiers in Big Data, online: <https://doi.org/10.3389/fdata.2021.622106>.

These examples illustrate the need for enhanced inquiry and critical evaluation in dealing with information. Fortunately, technology can also be harnessed as a tool to examine and expose mis- and disinformation. For example:

- Datasets of synthetic audio and video are being compiled by Google to support projects aimed at training AI systems to detect deepfakes.[62]
- Metadata is being embedded alongside images to establish their time and origin, irrespective of the context in which they are being used.[63]
- AI is being used to detect and defend against adversarial attacks (where machine learning models can be fooled by slightly – and typically imperceptibly – modifying inputs).
- AI is one of the tools used to distinguish fake from authentic social media accounts and disable the fake accounts.
- Machine learning is being used to provide a way to detect misinformation based on writing style and how articles are shared.[64]

62 Nick Dufour & Andrew Gully, "Contributing Data to Deepfake Detection Research" (September 2019), online Google AI blog <https://ai.googleblog.com/2019/09/contributing-data-to-deepfake-detection.html>.

63 Emily Saltz, Serena Parr & Scott Lowenstein, "How Publishers Can Use Metadata to Fight Visual Misinformation" (February 22, 2020) New York Times, online: <https://rd.nytimes.com/projects/how-publishers-can-use-metadata-to-fight-visual-misinformation>.

64 Brian Horowitz, "Can AI Stop People From Believing Fake News?" (March 15, 2021) IEEE Spectrum, online: <https://spectrum.ieee.org/ai-misinformation-fake-news>.

Part V: Practical implications for the profession

The way forward

During the roundtable event and other global outreach,[65] participants offered the following concrete steps that PAOs and/or individual PAs can take to help identify and mitigate the impacts of bias and mis- and disinformation, in order to enhance objectivity and integrity with a focus on the public interest. Of relevance is making sure that the information that is relied upon, and developed and/or disseminated by PAs is trustworthy. The recommendations below can help the profession take advantage of opportunities to evolve its role and become more visible in helping to combat bias, mis- and disinformation.

For PAOs:

Support equity and equality, diversity and inclusion in the profession:

- Make membership attractive for candidates who have diverse backgrounds. For some PAOs, this might include attracting foreign-trained professionals and students with education and/or experience in different domains (physical sciences, social sciences, engineering, etc.).
- Undertake meaningful equity and equality, diversity and inclusion programs within the organization and within the membership.
- Facilitate work environments that reflect inclusion, equity and belonging, and host the difficult conversations needed to achieve progress.[66]

65 *Supra* note 21.

66 ICAS, for example, amended the ICAS Code effective January 1, 2021, to explicitly include the concepts of equality, diversity and inclusion with respect to integrity, professional behaviour, and promoting an ethics-based culture, online: <https://www.icas.com/governance/diversity/news/changes-to-the-icas-code-of-ethics-equality-diversity-and-inclusion>.

- Engage in, and actively contribute to, international discussions and projects that foster the exchange of different perspectives on topics of importance to the profession.

Provide resources to help members and candidates develop and hone their skills:

- Consistently be a trusted source of information for members by providing a broad range of reliable resources to support members in their roles.
- Where possible, emphasize concepts such as identifying, evaluating and addressing bias and practicing effective information hygiene in the PAO's competency framework, as a means of influencing and supporting curricula of initial (pre-certification) and continuing professional development programs, including within firm training programs.
- Given the prevalence of technology-enabled mis- and disinformation, providing professional development resources in emerging technology (including benefits and risks) can support members' ability to apply an inquiring mind more effectively in a digital environment.
- Support PAs' public interest obligations to encourage employer and client accountability for practising ethical behaviour.

Encourage meaningful stakeholder engagement:

- Promote interdisciplinary relations by increasing communication with other professional bodies on the broader role of professionals in addressing bias and mis- and disinformation – acknowledging that this is not a 'single profession' issue.
- Take a public, organizational stance on the connection between trust and the importance of addressing bias and mis- and disinformation.
- Message to the public that PAs are well positioned to be part of the solution, given our professional education and experience, coupled with strong ethical principles.
- Communicate with stakeholders, including the public, to highlight what the profession is doing to respond to bias and mis- and disinformation (for example, raising PA awareness of the issues; enhancing PA competence in addressing the issues; tightening guidance and accountability through the outputs of the IESBA's Role and Mindset project[67] and its focus on mitigating bias and having an inquiring mind).

67 IFAC, *IESBA Revisions to the Code to Promote the Role and Mindset Expected of Professional Accountants* (New York: IFAC, October 2020), online: <https://www.ethicsboard.org/publications/final-pronouncement-revisions-code-promote-role-and-mindset-expected-professional-accountants>.

- Contribute to the development of professional standards that keep pace with the information needs of users, and are flexible enough not to hamper PAs from providing and verifying new types of information (e.g., non-financial information).
- Take advantage of any opportunities to contribute to discussions regarding the creation of standards for information integrity.
- Educate stakeholders on the roles of various players in the information eco-system and how PAs act as stewards and creators of value along the data governance chain; discussing both the opportunities and the limitations of those roles and systems, and the expectations that are reasonable to have of those fulfilling these roles. This can support and sustain the building of trust.

For individual PAs:

To identify and mitigate bias:

- Recognize that bias is a normal part of our world – both in humans and in the systems we create. Bias is complex, rather than complicated, so is something to be managed.[68] Identifying and understanding bias is our first tool in mitigating its potential for negative impacts.
- Proactively seek to understand your own biases and those of your colleagues though discussions and activities.[69]
- Consider whether you have a bias toward risk aversion or risk acceptance, and whether such an approach is appropriate in the situation.
- When acting as the leader in a discussion, consider refraining from sharing your views until others have spoken, to help avoid anchoring bias and groupthink.[70]
- Foster equity and equality, diversity and inclusion: our best defense against biased decision-making is ensuring that decisions are made by diverse and inclusive teams in the context of an equitable environment.
- Foster a safe environment: promote open communication, encouraging all team members to challenge assumptions without negative repercussions.

68 For the distinguishing elements of complex circumstances and suggestions on how to manage them, see paper 1 in this series, *supra* note 33.

69 For example, despite not being rigorous psychometric tests, Harvard's Implicit Association Tests can help individuals become more aware of implicit biases they might hold. See <https://implicit.harvard.edu/implicit/>.

70 *Supra* note 67 at 15-16.

To help ensure information relied on and produced by PAs is high-quality, consistent with our role as trusted advisors – whether in business, the public sector, or in public practice:

- Proactively consider the need for enhanced skepticism or additional inquiry; move the default position farther toward the questioning side when warranted, being mindful that bias can weaken our ability to be skeptical.[71]
- Verify information before you rely on it or distribute it.
- Recognize that considering alternative viewpoints requires purposefully breaking free of the sources of information being curated for you through algorithms and proactively seeking alternative sources.
- To combat threats related to deepfakes and other disinformation, educate your team, guard against complacency and employ more robust authentication defenses or other practices that can strengthen controls.[72]
- When evaluating the adequacy and reliability of information, ensure the context is understood. Context is needed in understanding data and the frame of reference from where it was compiled.
- If something sounds inaccurate, acknowledge that instinct and evaluate the information before relying on it.
- For important decisions, trace critical information back to the source where possible, rather than simply relying on the interpretations of others.
- When asked to confirm key calculations or estimates, consider taking a fresh look by first establishing how you would approach the problem, rather than simply reperforming the work of others, which will help avoid being biased by the initial approach and assumptions.
- When communicating information, be transparent about the level of certainty or lack thereof, particularly with respect to estimates, unless such transparency would be inappropriate in the context. Transparency drives trust; provide evidence and/or rationale to support decisions or recommendations, including outlining the process of decision-making where appropriate.
- Recognize that even when facts are stable, assumptions, interpretations and opinions can, and sometimes should, change. As Neil deGrasse Tyson counsels: "A proper skeptic questions what they're unsure of but recognizes when valid evidence is presented to change their mind."[73]

---

71 *Supra* note 45.

72 See, for example, Institute of Chartered Accountants in England and Wales, "The rise of deepfake audio fraud" (February 20, 2020), online: <https://www.icaew.com/insights/features/2020/feb-2020/the-rise-of-deepfake-audio-fraud>.

73 Neil deGrasse Tyson, "Scientific Thinking and Communication MasterClass" (2020), online: < https://www.masterclass.com/classes/neil-degrasse-tyson-teaches-scientific-thinking-and-communication >.

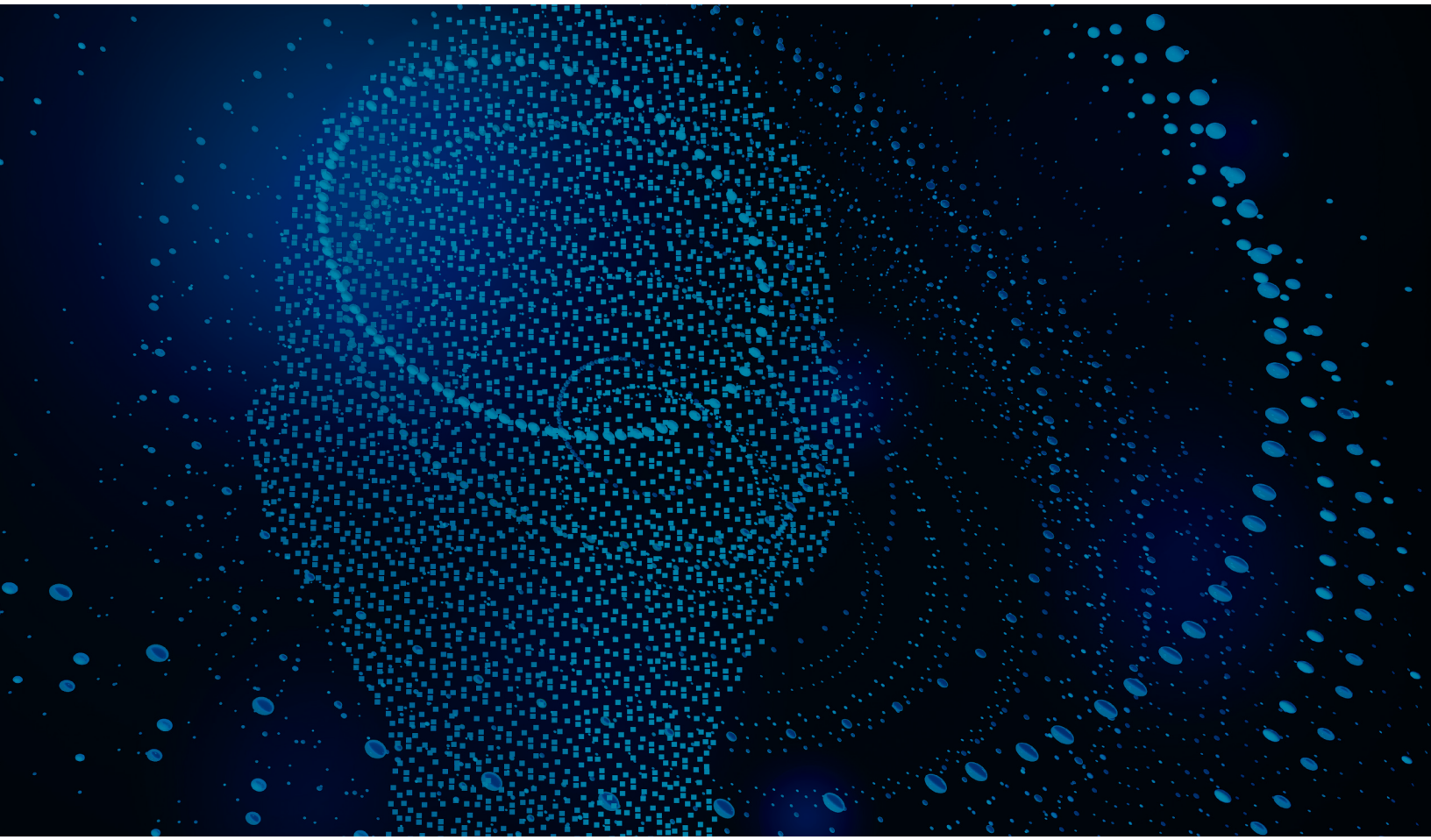
- Harness the power of technology: Incorporate the use of automated tools and techniques (such as data analytics and AI) to help systematize evaluation processes, taking care to first ensure that the tool itself (or developers) is not introducing new bias into an evaluation.
- Be humble; in today's complex business environment, there is significant uncertainty to manage, and our understanding of situations is often emergent for some time.

In closing, remember the concepts of having an inquiring mind and acting with integrity, consistent with our professional obligations and public interest responsibility:

- Be curious – ask probing questions, seek out opposing viewpoints and evidence, and actively solicit input from external sources and stakeholders.[74]
- Be courageous[75] – speak up when you identify issues.
- Demonstrate commitment – follow up to ensure appropriate mitigations have been effected.

74 *Supra* note 45.

75 ICAS, *The Power of One: Moral Courage* (Edinburgh: ICAS, 2e, November 2020), online: <https://www.icas.com/professional-resources/ethics/resources-and-support/moral-courage>.



CPA CHARTERED PROFESSIONAL ACCOUNTANTS CANADA

277 WELLINGTON STREET WEST
TORONTO, ON CANADA M5V 3H2
T. 416 977.3222 F. 416 977.8585
CPACANADA.CA