

**PHILADELPHIA COUNTY COURT OF COMMON PLEAS
TRIAL DIVISION**

**EXPERT REPORT OF
TIMOTHY L. FORT, PHD, JD**

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C. Syngenta provided post-service employment of former government officials, including officials who have influence over products like Paraquat.

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I. INTRODUCTION

I have been retained to provide an expert report—based on a documentary assessment—regarding the business decisions of the manufacturers and sellers of the herbicide Paraquat, including Syngenta Crop Protection, LLC (including its previous legacy companies and affiliates) and Chevron (including its subdivisions) (collectively, “Defendants”), related to their manufacture and sale of Paraquat. The opinions contained in this report are intended to aid the jury in contextualizing the significance of the Paraquat-related actions of Defendants through their corporate documents and testimony, particularly given the specialized knowledge needed to explain the business decisions of large corporations engaged in scientific research of pesticides and to allow the jury to fully understand the full scope of Defendants’ actions.

These opinions were made after review and consultation with the record and applying the facts and admissions contained therein to objective and established academic frameworks frequently used to assess actions of corporations such as Syngenta and Chevron.

All opinions and analyses offered in this Report are held to a reasonable degree of professional certainty.

I am being compensated at a rate of \$500.00 per hour for my work in this matter. My compensation is not conditioned on my opinions in this matter or otherwise based upon any outcomes in this matter.

A copy of my most recent CV and the materials considered list (“MCL”) are attached as exhibits to this Report.

II. PROFESSIONAL BACKGROUND AND QUALIFICATIONS

1. A copy of my curriculum vitae, which lists my education, expertise, and qualifications in the fields of Legal Compliance and Corporate Ethics, Business Law, and Business Ethics is attached as Exhibit A.

2. I have several areas of specific expertise. Having taught Business Law and Business Ethics and authored and/or edited thirty-seven books and approximately one hundred articles, book chapters, or book reviews over my career, I have developed expertise in Business Law, Business Ethics, and Corporate Compliance.

A. Education

3. I received a Bachelor of Arts degree in Government and International Relations from the University of Notre Dame in 1980.

4. I attended Northwestern University School of Law, graduating in 1983 with a Juris Doctor degree.

5. I also attended the University of Notre Dame, earning a Masters Degree in Systematic Theology in 1984.

6. I returned to Northwestern in 1992 to study for a PhD, which I received in 1995. The PhD is in Theology with a Business cognate, equivalent to a doctorate in Business Ethics, with approximately half my work at the Kellogg School of Management at Northwestern and the other half at Garrett Theological Seminary, a separate institution adjacent to Northwestern's Evanston campus.

B. Pre-Academic Career

7. After earning my JD and Masters degrees, I returned to my hometown in West Central Illinois to practice law with my father and one other partner in 1984. While practicing at Fort, Fort & Hennenfent, I began to teach, on an adjunct basis, courses in Business Law and in Business Organizations at nearby Monmouth College.

8. In 1988, I moved to Chicago and for one year, practiced estate planning law at the firm, Burke, Wilson & McIlvaine.

9. In 1989, I left law practice to work at Loyola University Chicago, where I was already teaching part-time. My full-time work was with Loyola's Development Office, where I continued to do estate planning work (charitable trusts, annuities, and other contractual agreements with Loyola donors) and fundraising work as Director of Major and Planned Gifts. I continued that work until 1994, when I left Loyola to pursue a full-time tenure-track position at the University of Michigan.

C. Academic Career

10. As noted above, I began teaching at Monmouth College in 1986 and taught there for two years.

11. For six years beginning in 1988, I taught business ethics in Loyola University's MBA program, including approximately twenty courses in Business Ethics and a course in the Legal Environment of Business.

12. In 1994, the University of Michigan Business School (now the Ross School of Business) hired me to a tenure-track position as an Assistant Professor. I spent the next eleven years at Michigan teaching Business Ethics, the Legal Environment of Business, Business Organizations, E-Commerce Law and Ethics, and Cultural Norms in Global Business. Most of my teaching occurred in the MBA program and in Michigan's executive programs. I received tenure in 2001 while being promoted to Associate Professor.

13. In 2005, I left Michigan, as a Full Professor with tenure, for the endowed Lindner-Gambal Professorship in Business Ethics at George Washington University ("GW"). I spent the next eight years at GW, where I taught at undergraduate, MBA, PhD, and Law School levels. Around 2011, I consulted in an informal capacity with representatives of the White House ethics office concerning ethics matters. I also co-led a Task Force on Business and Peace for the United States Institute of Peace.

14. At GW, I authored *Business, Integrity, and Peace* (Cambridge, 2008), which won the Academy of Management's Best Book Award and introduced a model for legal compliance and ethics called "Total Integrity Management." The model is used by other academics as a three-part approach to guide businesses as trustworthy organizations.

15. At GW, I served as academic director of (and taught in) a program for current and former NFL players and other professional athletes. That program moved to my new employer at Indiana University and began an MBA program for current and former NFL players. Because of this, I have taught well over one hundred NFL players.

16. In 2013, I moved to IU's Kelley School of Business as the Eveleigh Professor of Business Ethics and Professor of Business Laws and Ethics. My main task at Kelley was to build an ethics program and, after starting with four full-time ethics faculty eleven years ago, we now have twenty-two full time ethics faculty making us the largest business ethics faculty in the world. I stepped down as Coordinator of the Ethics Group in 2024.

17. My book, *The Diplomat in the Corner Office* (Stanford, 2015) received another Best Book Award from the Academy of Management. A few years later, I co-authored *The Sincerity Edge*, with Countess Alexandra of Fredriksborg (Denmark); it was later one of three finalists for the same award. I also published two textbooks, *The Legal Environment of Business* (West Academic) with one of my Northwestern Law School professors, Stephen Presser, and solely authored *The Vision of the Firm*, an ethics textbook, now in its fourth edition.

18. I am currently writing a book with Kristin Hahn, Executive Producer of Apple TV's "The Morning Show" and co-owner of Echo Films. The book is entitled *Songs, Sports, Stories and Suppers: How Shared Cultural Experiences Can Save America*.

19. In 2022, the Academy of Legal Studies in Business awarded me the Distinguished Career Faculty Award. In so doing, I became one of four professors in the history of the ALSB to have won both the Junior Faculty Award (1998) and the Distinguished Career Faculty Award. My CV lists other teaching and research awards, including research awards from each of the three major academic associations for business ethics: Academy of Legal Studies in Business, Society for Business Ethics, and the Academy of Management.

20. In 2023, I was nominated for the 2024 Nobel Peace Prize.

21. Overall, I have taught approximately 12,000 students in my career, at all levels, but with a majority being graduate or executive students. Much of my academic work involves analyzing corporate decision-making trends across a variety of sectors.

III. PRIOR EXPERT WITNESS TESTIMONY AND CONSULTING ENGAGEMENTS

22. I have served in consulting roles and have provided expert witness testimony. I have provided programs and/or advised multiple companies on issues of legal compliance and/or ethics ranging from Ford Motor Company, AT&T, Edward Jones, A.T. Kearney, Old National Bank, the U.S. Pension Benefit Guarantee Corporation, Ideal Industries, Deloitte, and Ferring Pharmaceuticals, to name a few.

23. The most in-depth consulting/coaching work was over an eight-year period with Countess Alexandra of Fredriksborg (Denmark) in her role as a member of the board of directors at Ferring Pharmaceuticals, headquartered in Switzerland, and more specifically in her role as chair of the board's ethics committee.

24. I have written two additional expert witness reports in the past two years but was not deposed in either case. The first case was *Dawn A. Dutrieux Witt, et al, v. Christine Lauber*, for which I was retained on behalf of Dawn A. Dutrieux Witt. The second case was *Marquis ProCap v. Novozymes North America, Inc.*, for which I was retained by Novozymes.

25. In terms of other expert witness testimony, while I have previously served as a qualified expert witness in several cases, I have not testified in a case within the past four years.

IV. MATERIALS AND INFORMATION CONSIDERED

A list of the materials that I reviewed in forming the opinions contained in this report is attached in Exhibit B.

V. METHDOLOGY UTILIZED FOR THIS REPORT

26. I utilize documentary assessment tracking evidence related to a particular outcome or characteristic as opposed to a concept or philosophy. Such a methodology has been validated in many other expert witness reports and then apply that documentary assessment methodology to three specific topics.¹

¹ For thirty years, I have used a formula to determine ethical business behavior (EBB) retrospectively (i.e., did a company conduct itself ethically) and prospectively (how can it build an ethical culture going forward) through a model I call Total Integrity Management (TIM). Neither EBB nor TIM offer anything necessarily new to the understanding of business ethics; instead, they describe the state of analysis in both academic research and in actual corporate conduct and then places a name on it. Thus, while a company may not practice, EBB or TIM in name, the components remain relevant regardless of the nomenclature provided. It is also set out in all four editions of my textbook, *The Vision of The Firm*, published by West Academic, and has been published in peer-review publications (for example, in my book *Business, Integrity, and Peace*) published via a peer review process by Cambridge University Press. The late William Frederick, one of the founders of the modern field of business ethics and a professor at the Katz School of Business at the University of Pittsburgh, coined the middle part of that formula.

$$EBB = (LC/J + (R_K + J_R + U) M^3$$

Where EBB stands for Ethical Business Behavior

27. A documentary assessment of Syngenta's "revolving door" hiring practices.²

28. A documentary assessment of the extent to which defendants have conformed their business decision-making conduct to the standards common to both ethical scientific research and to business ethics. This assessment will identify core principles of ethics in scientific research as well as in business ethics and will argue, in a Venn diagram kind of style, that there is overlap. Authoritative bodies have identified ethical scientific research in terms of accuracy, truthfulness, impartiality, and that those are also reflected in understandings of business ethics, then one can use a documentary assessment of the record to determine whether defendants have upheld these commonly accepted ethical values. In undertaking this assessment, reference will also be made to the Science for Profit model, a peer-reviewed assessment by scientists of how companies undermine ethics of scientific research³

L_C Stands for Complying with the Law, Provided the Law is Just

$R_K + J_R + U$ Stands for the Characterization of the field of Business Ethics in that it applies Rights, particularly as derived from the philosophy of Immanuel Kant R_K along with notions of Justice, particularly as derived from the philosophy of John Rawls J_R and considerations of Utilitarianism U .

M^3 stands for a factor of Motivation with the understanding that if one does not have motivation to be ethical – to care – then compliance and rhetoric will not lead to ethical actions.

And where

$TIM = HT + RT + GT$

Where TIM stands for Total Integrity Management

HT: Stands for Hard Trust or building corporate trustworthiness by complying with relevant laws that can punish a company if violated.

RT: Stands for Real Trust where corporate reputation has an economic payoff by adhering to norms that constituents of the company view as important, such as truth-telling, promise-keeping, and production of high-quality goods and services.

GT: Stands for Good Trust, where corporations embrace a sense of caring about stakeholders and virtues because they have an independent good to them, regardless of their benefits for compliance and for economic success.

² I previously served as an expert witness on The Ethics in Government Act and conduct related to "the revolving door" in what I believe is the largest defamation suit (and perhaps largest non-mass tort lawsuit) in U.S. history. I also cover the revolving door in my business law textbook (TIMOTHY L. FORT & STEPHEN B. PRESSER, BUSINESS LAW (2014) and have taught it in many classes. Finally, I have personal experience in working with a former official of the U.S. State Department on a post-employment program providing MBA advice to entrepreneurs in Afghanistan and Iraq in which the post-employment restrictions were applicable.

³ There may be some instances in which a scholar needs to have specialized knowledge of a discrete discipline to evaluate the appropriateness of an action. For example, one might need specialized knowledge to know how to weight the consequences of two different chemicals in carrying out an experiment, with those consequences impacting different persons, animals or the environment based on the impact of their DNA. I do not claim to be able to make such an evaluation. However, when there is overlap – similar to a Venn diagram – where values/virtues are common to both the particular field and to, in this instance, the field of business ethics (or ethics in general) that an evaluation can be made. For example, when I was a professor at the University of Michigan Business School, a PhD student (who had taken my

29. A documentary assessment of the extent to which defendants have considered their actions on stakeholders of the company, particularly with respect to farmers who use paraquat. These include the AACSB (the accrediting body for business schools worldwide) and the Business Roundtable. More specifically, given the public statements issued by defendants, claiming commitments to health and safety, such a commitment to end-user stakeholders is, in fact, a corporate promise which can be evaluated through a documentary assessment. In that evaluation, the documentary evidence shows that defendants had scant interest in the health and safety of farmers, instead, focusing almost exclusively of whether paraquat can pass regulation by the Environmental Protection Agency (“EPA”).

30. Based on the analysis provided in the foregoing three paragraphs, I will also apply the leading contemporary theories of business ethics.

VI. SUMMARY OF OPINION

- A. A documentary assessment reveals that Defendants engaged in business activities related to their manufacture of Paraquat that ran against established norms in the scientific research community and in the business community, particularly insofar as the ethics of those two areas overlap.
- B. In nearly textbook fashion, Defendants placed profit before science.
- C. Syngenta provided post-service employment of former government officials, including officials who have influence over products like Paraquat.
- D. Defendants’ actions related to Paraquat fail under contemporary business decision-making frameworks and should have instead taken managerial actions to ensure its compliance with these established norms.

VII. ADMISSIONS BY CORPORATE REPRESENTATIVES AND EMPLOYEES OF DEFENDANTS CONCERNING EARLY SALES OF PARAQUAT.

31. As demonstrated below, statements made by Defendants’ own corporate representatives and employees lay a framework for the internal business decision standards that Defendants professed to uphold yet failed to do so in regard to its Paraquat activities. Further, these admissions also point towards defendants’ early knowledge of paraquat’s toxicity.

MBA ethics class) asked me to serve on his dissertation committee. The title of his dissertation was “The Barycentric Method of Singular Spaces, about which, I did not understand a single word. However, the student indicated that (a) he had to have one professor from outside of the Mathematics Department on the committee and (b) he needed to have someone who could evaluate process. I legitimately filled both functions even if I did not understand the mathematics. Similarly, I may not have expertise related to particulars of molecular chemistry, but I can understand the conduct in question.

32. Companies have a duty to be truthful and honest in their communications with the government agencies that regulate their products.⁴

33. Companies continue to have ethical responsibilities to report findings to the agencies that regulate their products even if there may be doubt about whether or not to make a report.⁵

34. Pesticide manufacturers and distributors have a duty to act in a way that is responsible in order to ensure the health and safety of the individuals using their products and, in so doing, to protect those individuals from harm.⁶

35. Pesticide manufacturers and distributors have a duty to disclose serious effects and harms experienced by those who use their products.⁷

36. Pesticide manufacturers and distributors have a duty to exercise the highest standards of professionalism and science in conducting scientific research associated with the products that are made available to consumers.⁸

37. Scientists working for defendants have an ethical duty to share their scientific findings about paraquat.⁹

38. Pesticide manufacturers and distributors have a duty to be transparent in the findings resulting from their research as well as to publicly disclose the results of that research in a way that is objective and accurate.¹⁰

39. Pesticide manufacturers and distributors have a duty to communicate research findings and information related to the health, safety, and toxicity of their product in a responsible and timely manner.¹¹

⁴ Deposition of Philip Botham, February 26, 2020, at 490 & 598.

⁵ *Id.* at 287-288.

⁶ Deposition of Philip Botham, June 17, 2020, at 598.

⁷ *Id.* at 599.

⁸ *Id.*

⁹ Deposition of Philip Botham, February 26, 2020, at 490. See, also, Deposition of Ted Lock, August 21, 2024, at 115-116 with respect to the obligation to publish a study if the results showed that paraquat breached the blood-brain barrier.

¹⁰ Deposition of Philip Botham, June 17, 2020, at 600.

¹¹ *Id.*

40. Especially for heavily used products with serious impacts on human health, pesticide manufacturers and distributors have a duty to be transparent about scientific findings is critical.¹²

41. In the event pesticide manufacturers and distributors have information that paraquat is a neurotoxin, then it would be unethical, dishonest and improper for the company to withhold that information from the agencies regulating paraquat and from the public.¹³

42. Before selling paraquat, both ICI/Syngenta and Chevron knew that paraquat's redox capabilities made it an effective herbicide.¹⁴

43. According to testimony from Syngenta representatives, the "redox" process that kills plant cells also creates toxicity for humans.¹⁵

44. When defendants put paraquat on the market in the mid 1960s, they knew of evidence showing that paraquat had the potential to redox cycle in any human tissue, including the brain.¹⁶

45. As early as 1966, deaths from ingestion of paraquat were reported in the medical literature.¹⁷

46. Concerned about potential loss of registration that allowed paraquat to be sold in the U.S., ICI/Syngenta and Chevron explored the use of dyes, stanching agents, and emetics¹⁸ and received an exemption from the EPA for a "tolerance exemption", an exemption premised on the inclusion of an emetic not more than 0.1 percent of formulation of paraquat dichloride based on evidence of effectiveness provided by the companies.¹⁹

47. ICI/Syngenta and Chevron's research, however, showed the emetic concentration to not be effective until increased significantly beyond the registration level, evidence that was not shared with the EPA.²⁰

¹² Deposition of Philip Botham, February 26, 2020, at 291-93.

¹³ *Id.*

¹⁴ Deposition of Philip Botham, February 25, 2020, at 90-91; Deposition of Timothy Patterson, June 25, 2020, at 90, 148-49.

¹⁵ Deposition of Philip Botham, February 25, 2020, at 91, 212-1.

¹⁶ *Id.* at 100.

¹⁷ SYNG-PQ-00548877

¹⁸ SYNG-PQ-02514781, SYNG-PQ-03719623, SYNG-PQ-02450023, SYNG-PQ-01858013

¹⁹ *Id.*

²⁰ SYNG-PQ-02450673_R; CUSA-00256363; CUSA-00088442; CUSA-00305732; SYNG-PQ-02451088_R; SYNG-PQ-02451086

48. Indeed, the EPA expressed “anguish,” believing that Syngenta “intentionally misused the studies to mislead them.”²¹

49. A 1969 ICI/Syngenta study showed paraquat in the urine of every worker studied in Malaysia.²²

50. After marketing paraquat in the United States for ten years, neither ICI/Syngenta nor Chevron had done any long-term toxicity studies, prompting Dr. Fletcher of ICI and Cavalli of Chevron to correspond with Dr. Cavalli stating that the studies that had been done were “old” and “poorly done.”²³

VIII. OPINION DETAILS

A. A documentary assessment reveals that Defendants engaged in business activities related to their manufacture of Paraquat that ran against established norms in the scientific research community and in the business community, particularly insofar as the ethics of those two areas overlap.

Syngenta’s and Chevron’s Stated Commitment to Sound Science

51. Syngenta employees repeatedly articulate strong commitments to science itself.

52. For example, Philip Botham, who worked for Syngenta in various science-related roles for over forty years and who was deposed as a designated Syngenta representative, testified that “It is all part of our desire to get the best possible science done in any relationship between paraquat and Parkinson’s disease.”²⁴

53. Further, Dr. Botham agreed that the company has a duty to adhere to the highest standards of professionalism and good science:

Q. Okay. Would you agree with me that companies like Chevron and Syngenta, who are in the business of manufacturing and distributing pesticides like paraquat, have a duty to conduct scientific research with the highest standards of professionalism and good science?

A. I agree.²⁵

²¹ SYNG-PQ-01655689

²² SYNG-PQ-00695819

²³ CUSA-00189779, also SYNG-PQ-02514781

²⁴ Deposition of Philip Botham, February 16, 2022, at 491.

²⁵ Deposition of Philip Botham, June 17, 2020, at 599.

54. Similarly, Clark Ouzts testified that “Sir, science is what drives our company and that’s how we determine what’s safe and what that is.”²⁶

55. Robert Scott testified that” I go back to the position that within the laboratory we worked to the highest standards.”²⁷

56. Dr. Botham’s, and as spokesperson for Syngenta, the company’s stated commitment to the highest standards of professionalism and good science is echoed by Lewis Smith, another scientist who also worked for Syngenta or its legacy companies for over forty years (not counting a seven-year break in the 1990s, but including time as a consultant), many of those years in senior, leadership roles. He testified that “it has always been the principle of Syngenta and its legacy companies that you have a duty of care for the products you sell into the market.”²⁸

57. Contrasting what he believed to be the higher standards of science with that of the judicial system, Charles Breckenridge, another long-time Syngenta scientist testified that: “It was being played against falsity versus truth, so by searching for the truth is what any science endeavor is, and that’s – that’s the game.”²⁹

58. The assurance that one is right, however, can lead to an us-vs-them framing of the nature of information that is at stake and testimony makes clear that Syngenta scientists viewed the investigation of the relationship between paraquat and Parkinson’s Disease as a contest to be won rather than quest for truth to be found. Continuing from the previous testimony, Dr. Breckenridge testified:

Q. You go on to state, It is a multidimensional chess game played over time with the opposition being potential litigators who won’t care much for scientific purity. That’s what you wrote to Jonathan Sullivan, correct?

A. That’s my impression at that time, yes. I might have written it different today.

Q. Okay. Your impression was that the project involving paraquat and parkinsonism was a chess game that was going to be played with lawyers?

²⁶ Deposition of Clark Ouzts, February 22, 2022, at 146.

²⁷ Deposition of Robert Scott, October 13, 2022, at 123.

²⁸ Deposition of Lewis Smith, October 11, 2022, at 31.

²⁹ Deposition of Charles Breckenridge, January 18, 2023, at 130-131

A. I don't know. It was a multidimensional, multifactorial requiring a broad knowledge about biology in order to get relevant information. That's the way I would state it today.³⁰

59. In his letter to Jonathan Sullivan, Dr. Breckenridge continues "I urge you, personally, to ensure that [Lewis Smith's] given all the tools needed to get this job done. That includes preventing those who do not understand what is at stake, from interfering with the team function."³¹

60. Yet, if the aim of Syngenta's scientists is to discover truth, then what are the "multidimensional," "multifactorial" factors that would "interfere with team function?" Dr. Breckenridge's own testimony that there is more at stake in this "chess game" than scientific truth.

61. Objecting to the notion that Syngenta might have a bias toward defending the safety of paraquat, as opposed to ANVISA, the regulatory body in Brazil that ultimately banned paraquat's sale in that country, Andy Cook testified that "I think we look at it with scientific objectivity."³²

62. Jeffrey Podawiltz expanded on what sound scientific principles mean, when he testified that they included full, fair transparency:

Q: Was it Chevron's philosophy that it had an obligation to be full, fair, transparent, and thorough in sharing with people in the community what it knew about the risks and hazards of paraquat?

A: I would say that that's correct.³³

63. In stating a reliance on science, Sarah Hull, head of communications for Syngenta, testified that they relied on the scientific team, a team she trusted, for information to convey to the public:

Q: "You didn't do anything to find out, to figure out that little conundrum, did you?"

³⁰ *Id.*

³¹ SYNG-PQT-ATR-16994845

³² Deposition of Andy Cook, October 19, 2022, at 247.

³³ Deposition of Jeffery Lowell Podawiltz April 26, 2022, at 265.

A. That was not my responsibility at the company. We had science – scientific team that was responsible for them.³⁴

64. These statements demonstrate what I expect to be a non-controversial assessment that Syngenta (and Chevron) scientists deeply believed in the values and principles of science. With that in mind, it is worth more thoroughly setting out the values and principles of sound science, principles and values that, again, I expect would be non-controversial statements with which scientists at Syngenta and Chevron would agree.

Core Values in Scientific Ethics

65. To document core principles of ethics in science and research, I consulted publications and/or statements from the following sources: The National Academies of Science, the Rand Corporation Literature Review of Ethics and Conflicts of Interest; The Society of Toxicology Code of Conduct and Conflicts of Interest, the WAME Editorial Board Policy and Publication Committee, the National Institute of Health; the World Health Organization; The Belmont Report, and the National Science Foundation.

66. Noting the scientific enterprise is based on trust,³⁵ The National Academies of Sciences (“NAS”) states that “[T]he term “scientist” is the title and the text applies very broadly and includes all researchers engaged in the pursuit of new knowledge through investigations that apply scientific methods.”³⁶

67. The NAS states that scientists have three basic obligations: “obligation to honor the trust their colleagues place in them...researchers have an obligation to themselves.... researchers have an obligation to act in ways that serve the public” including, for example toxicological studies.³⁷

68. In warning of becoming advocates, the NAS states that “Researchers have a professional obligation to perform research and present results of that research as objectively and as accurately as possible. When they become advocates on an issue, they may be perceived by their colleagues and by the members of the public as biased.”³⁸

69. While acknowledging that “ Researchers are generally entitled to financial gain from their work, the NAS warns that such concerns can affect *the design, the interpretation of data,*

³⁴ Deposition of Sarah Hull, May1, 2024, at 57.

³⁵ National Academy of Sciences, National Academy of Engineering, and Institute of Medicine. 2009. *On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition*. Washington, DC: The National Academies Press at ix.

³⁶ *Id.* at x.

³⁷ *Id.* at 6, 12.

³⁸ *Id.* at 48.

or the presentation of the results.”³⁹ This is why “there is substantial evidence that the source of funding strongly influences the conclusions that are reached...This makes it essential that any sources of funding and potential conflicts of interest are declared.”⁴⁰

70. Further cautioning about maintaining objectivity and accuracy, the NAS states that the manipulation of data in ways that deceive others violates all three obligations.⁴¹

71. The NAS further cites to a statement by the U.S. Office of Science and Technology regarding scientific misconduct and notes that this statement has been adopted by most research funding agencies. It defines scientific misconduct as Fabrication: making up data or results; Falsification: “manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record”⁴²

72. Finally, in summarizing the principles underlying ethics in science, the NAS Guide makes a statement that connects the ethics of science with the ethics of business and, for that matter, with ethics generally: “The values on which science is based – including honesty, fairness, collegiality, and openness – serve as guides to action in everyday life as well as in research...[s]o long as these values are honored, science – and the society it serves – will prosper.”⁴³

73. Another source for determining ethical principles in science comes from a comprehensive literature review conducted by the Rand Corporations: Ethics in Scientific Research. This publication provides a literature review across scientific disciplines, including interviews with experts in U.S. Europe, and China. More than 200 documents were reviewed to identify ten ethical principles generally common from one scientific discipline to another.⁴⁴

74. Those ten “Ethical Principles for Scientific Research” are follows:

Duty to Society

³⁹ *Id.* at 43 (emphasis added).

⁴⁰ Neil Pearce, *Corporate Influences on Epidemiology*, 37 INTERNATIONAL JOURNAL OF EPIDEMIOLOGY 46, 49 (2008). In a counter point to this article, however, two respondents noted that different individuals within corporations and different corporations themselves can differ according to their susceptibility to profit-oriented influences (Sander Greenland, *Commentary: Addressing Corporate Influence Through Ethical Guidelines*, 37 INTERNATIONAL JOURNAL OF EPIDEMIOLOGY 57, 58 (2008)) though that is less true of medicinally-related studies than to those related to products and their marketing. (Joanna Haas, *Commentary: Epidemiology and the Pharmaceutical Industry: An Inside Perspective*, 37 INTERNATIONAL JOURNAL OF EPIDEMIOLOGY 53, 53-54 (2008).

⁴¹ National Academy of Sciences, National Academy of Engineering, and Institute of Medicine. 2009. *On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition*. Washington, DC: The National Academies Press at 8.

⁴² *Id.* at 5.

⁴³ *Id.* at 48.

⁴⁴ Weinbaum, Cortney & Landree, Eric & Blumenthal, Marjory & Piquado, Tepring & Gutierrez, Carlos. (2019). Ethics in Scientific Research: An Examination of Ethical Principles and Emerging Topics. 10.7249/RR2912 at ix.

Beneficence
Conflict of Interest
Informed consent
Integrity
Nondiscrimination
Nonexploitation
Privacy and confidentiality
Professional competence
Professional discipline⁴⁵

75. The publication further categorized these ten principles in three ways: Ethical Scientific Inquiry, Ethical Conduct and Behaviors of Researchers, and Ethical Treatment of Research Participants.⁴⁶

76. While I will make note of the last of these in noting the continuing issues of ethical scientific research with respect to research participants, this last category (comprised of informed consent, beneficence, nondiscrimination, nonexploitation, and privacy and confidentiality), is not as central as Ethical Scientific Inquiry, which is comprised of Duty to Society and Ethical Conduct and Behaviors of Researchers, which is itself comprised of Conflict of Interest, Integrity, Nondiscrimination, Professional Competence, and Professional Discipline.⁴⁷

77. And of these, I will focus on Duty to Society, Conflict of Interest, Integrity (specifically honesty and truth-telling, and the elimination of bias) and, to some degree on Beneficence.

78. Quoting the ACM Code of Ethics for computer scientists in its elaboration on the meaning of the Contribution to Society and to Human Well-Being, the Rand literature review states that:

In this document, “harm” means negative consequences, especially when those consequences are significant and unjust. Examples of harm include unjustified physical or mental injury, unjustified destruction or disclosure of information, and unjustified damage to property, reputation, and the environment. This list is not exhaustive.⁴⁸

Well-intended actions, including those that accomplish assigned duties, may lead to harm. When that harm is unintended, those responsible are obligated to undo or mitigate the harm as much as possible. Avoiding harm

⁴⁵ *Id.*

⁴⁶ *Id.* at xi.

⁴⁷ *Id.*

⁴⁸ *Id.* at 14, *citing* Association for Computing Machinery Code of Conduct.

begins with careful consideration of potential impacts on all those affected by decisions. When harm is an intentional part of the system, those responsible are obligated to ensure that the harm is ethically justified. In either case, ensure that all harm is minimized.⁴⁹

79. With respect to the principle of Integrity, the publication states that:

The most frequently discussed aspect of integrity is the importance of honest and truthful reporting of results.... A great number of articles discussed overrepresentation of positive results and underrepresentation of negative results in publications...both positive and negative results should be published or be publicly available.⁵⁰

80. A third source identifying ethical principles of science, and one particularly relevant for this case, comes from the Society of Toxicology (of which Syngenta scientists were members)⁵¹ Code of Ethics and Conflict of Interest.

81. According to this document, SOT members shall follow eleven ethical principles, of which the first (most relevant) six are:

Conduct their work with objectivity and themselves with integrity;
Practice honesty and truthfulness in reporting and communicating their research;
Hold as inviolate that credible science is fundamental to all toxicological research and is the basis for communicating results;
Recognize a duty to communicate information concerning health, safety, and toxicity in a timely and responsible manner, with due regard for the significance and credibility of the available data;
Give due consideration to the ethical, legal, social and policy implications of their research and communications; and
Be a thoughtful advocate for human, animal, and environmental health⁵²

82. The World Association of Medical Editors (“WAME”) states, with respect to conflict of interest: “Having a competing interest does not, in itself, imply wrongdoing. However,

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ October 12, 2022 Deposition of Lewis Smith at 84-85

⁵² Society of Toxicology, Revised July 27, 2022, <https://www.toxicology.org/about/vp/code-of-ethics.asp>

it constitutes a problem when competing interests could unduly influence (or be reasonably seen to do so) one's responsibility in the publication process."⁵³

83. In providing an example of a financial tie WAME states that this..." [includes] having a research or clinical position that is funded by companies that sell drugs or devices as well as noting that"⁵⁴Personal relationships can also be a conflict of interest.⁵⁵

84. The National Institutes of Health provides Guiding Principles for Ethical Research. These include:

Social and Clinical Value
Scientific Validity
Independent Review
Informed Consent
Respect for Potential and Enrolled Subjects
Fair Subject Selection.⁵⁶

85. The World Health Organization ("WHO") similarly publishes its Standards and Operational Guidance for Ethics Review of Health-Related Research with Human Participants (regarding composition of research ethics committees). Of note are two standards, replicating several of the principles documented in the NAS, Rand, and Society of Toxicology reports:

Standard 4: Independence of the Research Ethics Committee (with at least one person having no connection to the organization that sponsors of conducts the research under review).⁵⁷

Standard 6: Evaluation of whether staff and members of the research ethics committee routinely follow REC policy, rules, and written procedures pertaining to transparency, accountability, and quality of the research ethics committee.⁵⁸

⁵³ WAME Editorial Policy and Publication Ethics Committees, *Conflict of Interest in Peer-Reviewed Medical Journals*, (posted March 27, 2009; updated July 25, 2009), <https://wame.org/conflict-of-interest-in-peer-reviewed-medical-journals>.

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ National Institutes of Health, *NIH CLINICAL RESEARCH TRIALS AND YOU, GUIDING PRINCIPLES FOR ETHICAL RESEARCH: PURSUING POTENTIAL RESEARCH PARTICIPANTS PROTECTIONS*, March 16, 2016, <https://www.nih.gov/health-information/nih-clinical-research-trials-you/guiding-principles-ethical-research>.

⁵⁷ World Health Organization. 2011. *Standards and Operational Guidance for Ethics Review of Health-Related Research with Human Participants*, at 8.

⁵⁸ *Id.* at 10.

86. The WHO also notes duties to the community related to the health effects or capacity of development.⁵⁹

87. The Belmont Report includes respect for persons such as autonomy and special concern for diminished capacity and beneficence.

88. Beneficence refers to acts of kindness and charity or to going beyond strict obligation.

89. By Justice, the Report indicates means principles of providing to each person an equal share, to each person according to individual need, to each person according to societal contribution, to each person according to individual effort, and to each person according to merit.⁶⁰

90. Finally, The National Science Foundation's ("NSF") Statement on Conflicts of Interest and Standards of Ethical Conduct identifies fourteen ethical principles for scientific research:

- (1) Consider public service as a public trust, requiring you to place loyalty to the Constitution, the laws, and ethical principles above private gain;
- (2) Hold no financial interests that conflict with the conscientious performance of your duties;
- (3) Engage in no financial transactions using nonpublic Government information nor allow the improper use of such information to further any private interest;
- (4) Unless an exception applies, solicit or accept no gift or other item of monetary value from a person or entity seeking official action, doing business with, or conducting activities regulated by the Foundation, or whose interests may be substantially affected by the performance of your duties;
- (5) Put forth honest effort in performing your duties;
- (6) Make no unauthorized commitments or promises of any kind purporting to bind the Government;
- (7) Avoid using public office for private gain;
- (8) Act impartially and give no preferential treatment to any private party or individual;
- (9) Protect and conserve Federal property and use it only for authorized activities;

⁵⁹ *Id.* at 1-2.

⁶⁰ Office of the Secretary of the Department of Health, Education and Welfare, and the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, *The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research* (April 18, 1979).

- (10) Engage in no outside employment or activities, including seeking or negotiating for employment, that conflict with your official Government duties and responsibilities;
- (11) Disclose waste, fraud, abuse, and corruption to appropriate authorities;
- (12) Satisfy in good faith your obligations as a citizen, including all just financial obligations, especially those -- such as Federal, state, or local taxes -- that are imposed by law;
- (13) Adhere to all laws and regulations that provide equal opportunity for all Americans regardless of race, color, religion, sex, national origin, or handicap; and
- (14) Endeavor to avoid any actions creating the appearance that you are violating the law or other ethical standards⁶¹

91. Clearly, several of these NSF principles apply to individuals working for the U.S. government, yet they also, at a minimum, do not contradict any of the principles articulated by the other organizations cited.

92. Figure 1 provides a table summarizing these core principles of ethics in science.

Figure 1: Core Principles of Ethics in Science

From National Academies of Sciences: Rand Corporation; Society of Toxicology; WAME
Editorial Policy and Publication Committee; National Institute of Health: World Health
Organization: The Belmont Report; National Science Foundation

Core Principles of Research	Additional Principles Related to Subjects
Integrity	Informed Consent
Transparency	Non-Discrimination
Honesty	Non-Exploitation
Independence	Privacy & Confidentiality
Respect	Professional Competence
Duty to Society	Professional Discipline
Full Communication	
Avoidance of Bias	

93. The principles in the left column would be applicable to any scientific research, while those in the right column would seem to pertain to protection of individuals participating in scientific experiments and surveys. For purposes of these opinions, I limit my consideration to those principles in the left column.

⁶¹ National Science Foundation, *Conflicts of Interest and Standards of Ethical Conduct* (Revised, October 20, 2022), at 8.

94. Other sources further elaborate ethical principles in scientific research, some of which provide additional context for a given principle and others ranging to the ethics of protection of subjects of experiences.

95. Thus, I conclude that the core principles of ethics in science are:

- Integrity
- Transparency
- Honesty
- Independence
- Respect
- Duty to Society
- Full Communication
- Avoiding Bias

96. As earlier noted, from the evidence produced in this case to date, I do not see nor would expect to see a contradiction from any employee of Syngenta or of Chevron as to the validity of these principles.

97. Also, as noted earlier in the summary of the NAS Guide, “The values on which science is based – including honesty, fairness, collegiality, and openness – serve as guides to action in everyday life as well as in research...[s]o long as these values are honored, science – and the society it serves – will prosper.”⁶²

98. This statement indicates that even if there may be, nuanced aspect of science requiring specialized knowledge to assess, the core principles of ethics in scientific research are applicable in life – and as I will argue below – and in business.

Establishment of Core Business Ethics

⁶² ON BEING A SCIENTIST: A GUIDE TO RESPONSIBLE CONDUCT IN RESEARCH NATIONAL ACADEMIES OF SCIENCES (3ed., 2009), at 48.

99. On one hand, the field of business ethics is ancient, with commentary from the likes of Aristotle,⁶³ Thomas Aquinas,⁶⁴ Martin Luther,⁶⁵ John Calvin,⁶⁶ and John Wesley,⁶⁷ John Locke,⁶⁸ Immanuel Kant,⁶⁹ and Adam Smith.⁷⁰ Similarly, the question about the purpose of business – whether it was to contribute to the public good or focus more narrowly on profitable return on investment – was debated in Roman Antiquity,⁷¹ the early days of the American republic,⁷² and in the post-Depression era.⁷³ Within the field of business ethics, the starting point for the contemporary academic field tends to begin with Raymond Baumhart’s 1969 work: *An Honest Profit*.⁷⁴ Baumhart, a Jesuit priest and later president of Loyola University Chicago, interviewed business leaders as to what ethical values they saw as important.

100. Baumhart’s interviews produced these principles:

Integrity
Fairness to Stakeholders
Responsibility/Accountability for actions and impacts on others
Respect for others
Social Responsibility

101. The academic field grew in the 1970s and 1980s with conferences, anthologies and early efforts to translate classic philosophical texts into applied business ethics. Those works

⁶³ ARISTOTLE, *NICHOMACHEAN ETHICS*, (Roger Crisp, ed.) (2000).

⁶⁴ *See, generally*, ST. THOMAS AQUINAS, *SUMMA THEOLOGICA*, (Thomas a Kempis, ed., 1948.)

⁶⁵ *See, generally*, MARTIN LUTHER, *THE COLLECTED WORKS OF MARTIN LUTHER: THEOLOGICAL WRITINGS, THE NINETY-FIVE THESES, THE BONDAGE OF THE WILL, THE CATECHISM*, (C.M. Jacobs, trans., 2018).

⁶⁶ *See, generally*, JOHN CALVIN *INSTITUTES OF THE CHRISTIAN RELIGION* (2008, ED.).

⁶⁷ *See, generally*, JOHN WESLEY, *THE WORKS OF JOHN WESLEY*, (3d., ed.,)(1978).

⁶⁸ JOHN LOCKE, *Of Property*, in *Second Treatise, AN ESSAY CONCERNING THE TRUE ORIGINAL, EXTENT AND END OF CIVIL GOVERNMENT* (2020).

⁶⁹ IMMANUEL KANT, *A CRITIQUE OF PURE REASON* (2016).

⁷⁰ ADAM SMITH, *AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS* (2013); ADAM SMITH, *THE THEORY OF MORAL SENTIMENTS* (2011); SEE ALSO PATRICIA WERHANE, *ADAM SMITH AND HIS LEGACY FOR MODERN CAPITALISM* (1991).

⁷¹ *See*, Reuven Avi-Yonah, *The Cyclical Transformations of the Corporate Form: A Historical Perspective on Corporate Social Responsibility* 30 *DELAWARE JOURNAL OF CORPORATION LAW* 767-818 (2005).

⁷² *See*, TIMOTHY L. FORT, *VISION OF THE FIRM: ITS GOVERNANCE, OBLIGATIONS, AND ASPIRATIONS* (4thed. 2023).

⁷³ *See*, A.A. Berle, *For Whom Corporate Managers Are Trustees: A Note*, 45 *HARVARD LAW REVIEW* 1372 (1932); E.M. Dodd, *For Whom Are Corporate Managers Trustees?* 45 *HARVARD LAW REVIEW* 1145 (1932).

⁷⁴ RAYMOND C. BAUMHART, *AN HONEST PROFIT: WHAT BUSINESSMEN SAY ABOUT ETHICS IN BUSINESS* (1968)

included R. Edward Freeman's *Strategic Management: A Stakeholder Approach*,⁷⁵ Patricia Werhane's *Persons, Rights & Corporations*,⁷⁶ Thomas Donaldson's *Corporations and Morality*,⁷⁷ and a decade later, Robert Solomon's *Ethics & Excellence*,⁷⁸ William C. Frederick, *Values, Nature & Culture in the American Corporation*,⁷⁹ Edwin Hartman's *Organizational Ethics and the Good Life*,⁸⁰ Thomas Donaldson and Thomas W. Dunfee's *Ties That Bind*,⁸¹ and Timothy Fort's *Ethics and Governance*.⁸²

102. In the 1980s, business schools began to offer increasing number of courses on the topic, resulting in a series of textbooks, most of which remain popular in later editions, including Tom L. Beauchamp and Norman E. Bowie's *Ethical Theory and Business*,⁸³ Thomas Donaldson & Patricia Werhane's *Ethical Issues in Business: A Philosophical Approach*,⁸⁴ LaRue Tone Hosmer's, *Moral Leadership in Business*⁸⁵ and Manuel G. Velasquez, *Business Ethics: Cases & Concepts*⁸⁶ among others.

103. Commonly stated values in these books include:

Honesty
Integrity
Fairness to stakeholders
Respect
Transparency
Responsibility
Accountability
Compliance with Law
Sustainability

⁷⁵ R. EDWARD FREEMAN, *STRATEGIC MANAGEMENT: A STAKEHOLDER APPROACH* (1984).

⁷⁶ PATRICIA H. WERHANE, *PERSONS, RIGHTS, & CORPORATIONS* (1985).

⁷⁷ THOMAS DONALDSON, *CORPORATIONS & MORALITY* (1982).

⁷⁸ ROBERT C. SOLOMON, *ETHICS & EXCELLENCE: COOPERATION AND INTEGRITY IN BUSINESS* (1992).

⁷⁹ WILLIAM C. FREDERICK, *VALUES, NATURE & CULTURE IN THE AMERICAN CORPORATION* (1995).

⁸⁰ EDWIN HARTMAN, *ORGANIZATIONAL ETHICS AND THE GOOD LIFE* (1996).

⁸¹ THOMAS DONALDSON & THOMAS W. DUNFEE, *TIES THAT BIND: INTEGRATIVE SOCIAL CONTRACTS THEORY* (1999).

⁸² TIMOTHY L. FORT, *ETHICS AND GOVERNANCE: BUSINESS AS MEDIATING INSTITUTION* (2001).

⁸³ DENIS E. ARNOLD, TOM L. BEAUCHAMP & NORMAN BOWIE, *ETHICAL THEORY AND BUSINESS* (10th ed., 2020).

⁸⁴ THOMAS DONALDSON & PATRICIA WERHANE, *ETHICAL ISSUES IN BUSINESS: A PHILOSOPHICAL APPROACH* (8th ed., 2007).

⁸⁵ LARUE TONE HOSMER, *MORAL LEADERSHIP IN BUSINESS* (1993).

⁸⁶ MANUEL G. VELASQUEZ, *BUSINESS ETHICS: CONCEPTS AND CASES* (7th ed., 2011).

Loyalty to commitments

104. The relevance and importance of the field increased given legislative enactments, such as the 1991 Amendments to the 1984 Federal Sentencing Guidelines. The 1991 Amendments provide that corporations could achieve reduction in fines imposed against them, should they be found to violate federal law, if they created and monitored “compliance systems.”⁸⁷

105. In the aftermath of corporate scandals at the turn of the millennium, Congress further addressed corporate misconduct through the Sarbanes/Oxley of 2002⁸⁸ as well as another set of Amendments to the Federal Sentencing Guidelines in which, in order to take advantage of the provisions of the Guidelines (i.e. reduced fines if good-faith efforts attempted to address the prevention of corporate misconduct), companies needed to create “organizational cultures” leading to “ethics and compliance.”⁸⁹

106. In 2004, the main accrediting body for business schools internationally, the Association to Advance Collegiate Schools of Business (“AACSB”) adopted a report mandating coverage of ethical issues in business education.⁹⁰

107. Though legislative and institutional actions, as well as media coverage, certainly played a significant part in the mainstreaming of business ethics, my own experience is that the relevance of the topic was transformed by the development of smart phones. In the mid-late 1990s, it was neither legislators, donors, deans, nor faculty that made ethics relevant to my students. It was when they realized that a corporate indiscretion could be captured on a phone and broadcast worldwide in a matter of seconds that my classes began to overflow.

108. Cementing the mainstreaming of the topic, however, is evidenced by the Business Roundtable’s 2016 commitment to the importance of considering stakeholders in making business decisions⁹¹ and the growth of consulting businesses, such as Ethisphere,⁹² the Ethics Compliance Initiative,⁹³ Deloitte and others⁹⁴ in advising business organizations on ethical issues.

⁸⁷ United States Sentencing Commission, *1991 Federal Sentencing Guidelines Manual*, 1991.

⁸⁸ Sarbanes-Oxley Act of 2002

⁸⁹ United States Sentencing Commission, *U.S. Sentencing Guidelines Manual* §8A1.1 (2023)

⁹⁰ Report of the Ethics Education Task Force to AACSB International’s Board of Directors, *Ethics Education in Business Schools* (2004), <https://www.aacsb.edu/-/media/publications/research-reports/ethics-education.pdf?la=en>.

⁹¹ Business Roundtable, *Principles of Corporate Governance* (2016).

⁹² Ethisphere Institute at <https://ethisphere.com>.

⁹³ Ethics and Compliance Initiative at <https://www.ethics.org>.

⁹⁴ Deloitte Ethics Program at <https://www.deloitte.com/global/en/about/story/purpose-values/ethics-at-deloitte.html>.

109. An additional source of relevant ethical principles comes from a survey my co-author (Countess Alexandra of Denmark) and I did in surveying business leaders in North American and in Europe on what principles were most important in leading ethical businesses. These leaders had preestablished reputations for being strong leaders. The ethical values they thought were most important were:

Honesty
Integrity
Accountability
Loyalty
Resilience
Sincerity
Ambition⁹⁵

110. This survey appeared in peer-reviewed book, published by Stanford University Press and was one of three finalists for the 2019 Best Book Award for Social Issues awarded by the Academy of Management.

111. A final indicator of the identification of ethical principles in business comes from my students. Over my thirty-nine-year teaching career, I have started nearly every ethics class with a survey of students of what principles they would like to see practiced in a for-profit business they are part of. To date, I have surveyed approximately 7,000 students with the results of the top principles being highly predictable:

Honesty
Transparency
Integrity
Accountability
Creativity

112. Based on the foregoing documentation, ranging from classic philosophy to discipline-defining scholarship, to contemporary surveys and student beliefs, the following are identified ethical principles in business:

Honesty
Integrity
Fairness to Stakeholders
Respect
Transparency
Responsibility
Accountability
Compliance with Law
Sustainability
Loyalty

⁹⁵ ALEXANDRA CRISTINA & TIMOTHY L. FORT, THE SINCERITY EDGE: HOW ETHICAL LEADERS BUILD DYNAMIC BUSINESSES 43 (2017).

Resilience
Sincerity
Ambition
Creativity
Social Responsibility

113. Figure 2 depicts these principles with those shaded in yellow being identified by at least two of the four sources (and I strongly suspect those sources would endorse those not shaded in yellow as well):

Figure 2: Core Principles of Business Ethics

Principle	Baumhart	Academic Field	<i>The Sincerity Edge</i>	Business Students
Honesty		X	X	X
Integrity	X	X	X	X
Fairness to Stakeholders	X	X		X
Respect	X	X		
Transparency		X		X
Responsibility	X	X		
Accountability	X	X	X	X
Compliance with Law		X		
Sustainability		X		
Loyalty		X	X	
Resilience			X	
Sincerity			X	
Ambition			X	
Creativity				X
Social Responsibility	X			

114. In the foregoing analysis, there is one crucial area missing. Over the past thirty years, the major new area of study in the field of business ethics has been moral psychology. Building from (non-business) research of moral psychology from scholars such as Lawrence Kohlberg, Carol Gilligan, Jean Piaget, and Elliot Turiel, business ethicists began to examine the biases people have that blind them to the actions they are taking.⁹⁶

⁹⁶ See, TIMOTHY L. FORT, THE VISION OF THE FIRM: ITS GOVERNANCE, ASPIRATIONS AND OBLIGATIONS (4th ed., 2023), at 46-49.

115. A pioneer in this new field was David Messick at the Kellogg School of Management at Northwestern University, who argued that human beings' biases blinded them to the reality of the actions they are taking.⁹⁷ Indeed, humans' capacity to rationalize, many have argued, explains much of white collar crime, where people otherwise appearing to be solid, upstanding individuals, lead them to a slippery slope of insider trading, obstruction of justice, and host of other criminal acts.⁹⁸

116. Robert Prentice, a law and ethics professor at the McCombs School of Business at the University of Texas, created a resource explaining more than thirty kinds of cognitive biases that undermine one's own, even-handed assessment of one's own actions.⁹⁹ While in recent years, much attention has been paid to biases related to race, gender, and other issues, Prentice's focus is much broader in the range of ways that human beings can fail to objectively see the reasons for why they do what they do and, as a result, make poor ethical decisions. In my classes, I focus on three of these biases, each one relevant to the case at hand (which is not to say that others may be relevant as well). They are Framing, Role Morality, and Conformity Bias.

117. The framing bias refers to how we tend to describe things to our best advantage.¹⁰⁰ Nearly all marketing, whether selling a consumer product or a political candidacy, is about how best to frame an issue to one's benefit. One study, cited in Prentice's work, showed that consumers are more willing to buy meat advertised as 80% fat-free as opposed to 20% fat, even though the composition is the same. Professors presenting a proposal to a dean or students explaining why they are late turning in an assignment all make use of framing their statements. Litigators, of course, do the exact same thing. While there is nothing necessarily problematic about such actions, the ways in which one frames an action can also lead to decisions that are problematic. As Prentice notes, for example, in the space shuttle Challenger discussions, engineers from Morton Thiokol initially opposed approval of the launch on safety grounds, but when told by their general manager to "put on your management hats," the frame shifted from away from safety to one of dollars and cents and the shuttle was tragically launched.¹⁰¹

118. Role Morality refers to the decisions a person makes in their business role that may be quite different than the ones they would make in their personal life.¹⁰² Because their agency is often curtailed while carrying out (another form of agency) their work duties, individuals do not

⁹⁷ See, e.g., David Messick, Max Bazerman & Lisa Stewart, *Avoiding Ethical Danger*, in TIMOTHY L. FORT, THE VISION OF THE FIRM: ITS GOVERNANCE, ASPIRATIONS AND OBLIGATIONS (4th ed., 2023), at 24-34.

⁹⁸ See, Todd Haugh Business Ethics Bound at <https://www.businessethicsbound.com>.

⁹⁹ See, *Ethics Unwrapped*, at <https://ethicsunwrapped.utexas.edu>.

¹⁰⁰ TIMOTHY L. FORT, THE VISION OF THE FIRM: ITS GOVERNANCE, ASPIRATIONS AND OBLIGATIONS (4th ed., 2023), at 35-36.

¹⁰¹ University of Texas McCombs School of Business, *Ethics Unwrapped, Framing*, <https://ethicsunwrapped.utexas.edu/video/framing>.

¹⁰² TIMOTHY L. FORT, THE VISION OF THE FIRM: ITS GOVERNANCE, ASPIRATIONS AND OBLIGATIONS (4th ed., 2023), at 36.

necessarily make assessments of whether a business action is right or not; those decisions of right and wrong are deferred to somewhere else in the corporate hierarchy and one's role demands that one carry out the relevant job description.

119. Conformity Bias refers to the reality that it is difficult for a person in an organization to oppose that organization's conventional wisdom. Prentice cites a study in which research subjects were to determine the length of a stick. The subjects knew the right answer, but consistently gave the wrong answer when other (pre-planned) subjects provided a clearly wrong answer.¹⁰³ Or, using another example from concerns raised by an employee about an accounting firm's tax shelter, the employee received a note: "you're either on the team or off the team."¹⁰⁴ Being off the team can have consequences at work (or elsewhere) and to people rationalize to stay a part of the team.

120. Given the fact that this area of business ethics has emerged relatively recently, at least with respect to historical assessment of ethical responsibilities of business that reach back centuries on which the field of business ethics was initially built, these cognitive areas are not as heavily represented in the early canon of the field nor in associated textbooks. Yet, they have become significant drivers of the current field and, as noted already and will be set out more below.

121. The avoidance of bias is also a key principle of ethics in science and so I include it as a core feature of contemporary business ethics. Indeed, they have been applied to colleges and universities themselves. The potential for bias extends to universities generally since with an increased prevalence of donor – usually corporate – money to fund research, there is a risk of a loss of independence.¹⁰⁵

122. These three examples above – Framing, Role Morality, and Conformity Bias – are non-exhaustive of the kinds of cognitive biases human beings have that can blind them to the actions they take. As will be noted, they are applicable to the case at hand.

123. Figure 3 then illustrates the overlap between ethical principles in science (previously described and depicted in Figure 1) and those of ethical principles in business (previously described and depicted in Figure 2) to show the following as shared principles extending to each area:

¹⁰³ University of Texas McCombs School of Business, Ethics Unwrapped, *Conformity Bias*, <https://ethicsunwrapped.utexas.edu/video/conformity-bias>.

¹⁰⁴ *Id.*

¹⁰⁵ See, James Stuart, *The Academic-Industrial Complex: A Warning to Universities* 75 U COLO. L. REV. 1011 (2004) (noting that legislation that allows publicly-funded universities to profit from inventions also provides the incentives for other forms of commercial-university relationships that can undermine the independence of research); see, also, Richard A. Merrill, *Accounting for Science: The Independence of Public Research In The new, Subterranean Administrative Law*, 66 LAW & CONTEMPORARY PROBLEMS 227 (2003) (making a similar point); see, also, Large Donors Can Put Universities in Potentially Awkward Positions When Faculty Conclusions Conflict With the Interests of Those Benefactors at <https://www.kcur.org/news/2021-11-15/corporate-money-keeps-university-ag-schools-relevant-and-makes-them-targets-of-donor> criticism (noting specifically how large agricultural-business corporations apply influence to university research).

Figure 3: Consensus Values of Scientific Ethics & Business Ethics



124. Given this overlap, there is documentary reason to assess the conduct of Syngenta and Chevron in terms of these overlapping principles, to-wit:

Integrity
 Honesty
 Transparency
 Respect
 Fairness to Stakeholders/Society
 Avoidance of Bias

125. In addition, the principle of Accountability in the one principle—along with the holistic virtue of Integrity—that is common among all business ethics sources. Though not specifically noted in the ethics of science principles, I find it difficult to believe that it would not be a significantly important principle in scientific research and, indeed, that it is implied in the principles specified.

126. The following section considers the extent to which Syngenta’s and Chevron’s conduct accords with these overlapping, consensus principles of science and of business.

Application of Overlapping Ethical Principles to Syngenta and Chevron

Avoidance of Bias

127. The reason assessing bias is important is because it is an aspect of human nature. Unless one exercises some specific diligence to counteract that aspect, one would expect bias to occur. I have not seen evidence that Syngenta encouraged countervailing views or challenged the corporation's commitment to profit-making, or to equate safety with anything other than approval from a regulatory process over which they themselves influenced.

128. In my review of the materials, I have found almost no statements from either Syngenta or Chevron suggesting a realization that their employees could have a degree of bias in their work.

129. Yet, they allege that other scientists, critical of paraquat, do have bias:

A: I know Dr. Tanner and I happen to know that she is well-respected, but I also know other things about Dr. Tanner, which is that she is emotionally committed to the removal of pesticides and therefore is somewhat biased in her opinions.¹⁰⁶

130. Indeed, the only statement I have been able to find is with respect to the possible bias of Syngenta scientists is in the deposition of Lewis Smith, identified by one Syngenta scientist as "Mr. Paraquat,"¹⁰⁷ in which he again alleges that activist scientists are themselves biased rather than him or other scientists of Syngenta. When asked by interrogating attorney as to whether the same accusations of bias could be flipped to question Syngenta's possible bias, he discounted that likelihood.¹⁰⁸

¹⁰⁶Deposition of Lewis Smith, October 11, 2022, at 186.

¹⁰⁷ Deposition of Ted Lock, August 21, 2014, at 252.

A: Lewis – Lewis's role, from a very young age, was "Mr. Paraquat" if you want to put it that way.

Q: Why do you put it that way?

A: Well, because his career was spent almost full-time working on paraquat. Trying to understand in particular the lung, and in particular now the chemical was transported into the lung and trying to look for antidotes. He was very much involved in the whole – the process that the company went through to try and make paraquat safer as a product.

¹⁰⁸ "A: Of course, people who are working in the industry have either a conscious or probably subconscious bias towards that industry. I don't dispute that. What I do dispute is that when we employ scientists who have got careers outside of just industry, in other words, who want to be recognized for the kind of science that they do, and even if you're just totally rationally committed to the company, there's no profit in persuading people outside the industry of something that's not true because if it's not true, it will eventually come home to you, and you will lose out both professionally and the company and of course from your peers from scientific community.

Q. Dr. Smith, that's the exact same argument that can be used on the flip side. When you have this theory that academics wanted to come down to industry and find a link because they want fame, aren't they too potentially exposing themselves to later repudiation if they are wrong?

A. Exactly –

131. Similarly, Andy Cook's testimony implying bias of ANIVSA, the Brazilian regulatory agency, would seem to be at least applicable to Syngenta on the basis of Cook's criteria:

Q: Okay. You'd agree that Syngenta's -- was biased -- or has a bias in their review of scientific data as it relates to paraquat and Parkinson's?

A. I wouldn't agree with that. I think we look at it with scientific objectivity.

Q. Do you believe ANVISA's toxicology team did not look at the data with scientific objectivity?

A. I think the record clearly shows that they did not alter their opinion from day one in the whole of this process and were reluctant to make any changes to their opinion.¹⁰⁹

132. I found no evidence in the materials that Syngenta made any changes in its opinion, not only in the face of Paraquat's being banned by ANVISA, but also by its being banned or use severely limited by approximately 150 countries around the world including Switzerland, where

THE WITNESS: -- right. Exactly right. And that's why you see that quite often people have started to criticize, for example, for the alteration of dopaminergic cells in the mouse -- if you look at the scientific literature, you'll see that that stopped about in 2013. Why did it stop? Because lab had shown it to be, by the federal government of USA, modifying their data to make -- creating results. Cheating. What happens after that? People then say this looks very dodgy and not want to be associated with it. So, people do make choices. I think that I am only saying that I accept you to say we are biased in industry, but I think bias has got a financial penalty to it. If we get it wrong, we get hurt. If a scientist gets it wrong, he just moves on and studies something else.

Q. But that's not actually true, Doctor. If you are able to convince the public for ten extra years that there is no link between Paraquat exposure and Parkinson's disease, if in Year Ten you are proven wrong, the company has still made ten years' worth of profit and financial gain on that product; correct?

Q. They don't have anything to lose by pushing that conclusion down the road. They have financial gain every single year.

A. I think that may or may not be I don't think -- I think that removes the point that when you employ scientists, they are not thinking -- it may surprise you, but most of the time I didn't think about how much Paraquat was being made or how much money the company was making. I had a job in front of me to evaluate the safety, and if it had turned out -- I promise you this, and people who normally would say this -- I promise you if I found any causal link between the use of Paraquat and Parkinson's disease, I would not have allowed that to happen, and I would have left the company if they knew it and weren't going to do nothing about it. I think as individuals we much more are tuned to society than you are giving us credit for. Deposition of Lewis Smith, October 12, 2022, at 135-37.

¹⁰⁹ Deposition of Andy Cook, at 247-248.

Syngenta is headquartered, the United Kingdom where paraquat was manufactured, and China, home of Syngenta's parent company.

133. Such stubbornness seems more indicative of unflinching bias than that of one country's regulatory decision that seems consistent with a global consensus.¹¹⁰ I would think that if over 150 countries of the world thought one's product was dangerous and multiple, respected scientists in the field thought the same thing, then the commitment to scientific objectivity and truth would admit more of a humbleness and humility from Syngenta scientists that I have found anywhere in the record.

134. Not only do Syngenta scientists not admit to some degree of humility, but they also proudly claim that they are in tune with society. Dr. Smith frames Syngenta's duty to society merely in terms of determining whether there is a causal link between exposure to paraquat and Parkinson's Disease. How would he know that people limit their interest solely to causation? Causation may be a legal standard, but people care about associative and correlative links as well. By what criteria does he justify that as being "much more tuned to society" than people might being credit to them for?

135. While Chevron may have issues with respect to upholding its ethical duties with respect to Paraquat, there is at least evidence from its scientists of the burden of their duties and a question – a question I have not seen in any Syngenta documents – concerning the well-being of society and the individuals in it. One scientist wrote to another that:

I believe that we should take the initiative and put the skull and bones and the word "poison" on the label. It seems to me that it is our responsibility to give the public such a warning since we have unique knowledge regarding the toxicity of this chemical. The public at large would be prone to handle the chemical the same as other products falling within the class of chemicals carrying the type of warning now used. It seems to me that such a warning is not adequate for this chemical due to its unique poisoning properties and the absence of any practical antidotal treatment.¹¹¹

136. Chevron clearly knew about the dangers of paraquat – beyond that of just poisoning. Not only had their scientists commented upon the dated and inferior quality of studies concerning the product, in an exchange between R Gwin Follis to the Chevron Health Center, Mr. Follis wrote: "For the present, we can hope that another chemical or cause will explain the correlation found in the Barbeau study, but I trust Chevron is watching this closely, and, perhaps, doing a little testing, for the sake of its customers and shareholders...Since we don't want to take any chance of facing an asbestos situation down the road, I am sure your people are falling this

¹¹⁰ Syngenta's Responses and Objections to Plaintiffs' Second Set of Interrogatories *In Re: Paraquat Products Liability Litigation*, February 19, 2024; Syngenta's Objections and Responses to Plaintiffs' First Set of Request for Admissions of Facts in *Hoffman*, May 4, 2020; Pesticides Action Network (PAN), *Consolidated List of Banned Pesticides*, 2022.

¹¹¹ SYNG-PQ-01770739; CHEV-SJ0009042

aspect of the matter most closely. However, I thought I would pass this on to you as I cannot think of anything more horrible for us to bequeath....our successors than an asbestos problem.”¹¹²

137. Even if framing Syngenta’s responsibility as one related to causality, the company knew – as did Chevron – of the potential dangers better than the public, if one were, indeed “tuned to society,”

Q: You have had these three “Big Questions” [how much paraquat gets into the brain, how long does it stay, is it still killing brain cells] presented to your health science team for five years now, correct?

A: Right, but I think you need to also see that...we did indeed make some progress on how to answer some of those questions...

Q: You have been asking the same three big questions for five years, sir. My question is how many years do you have to ask these big safety questions before somebody at the meeting says: “Maybe we should stop selling until we get the answers...”

A: “We were, and we were beginning to tackle those questions.”¹¹³

138. Indeed, it is difficult to find many statements from Syngenta and Chevron employees evincing a care for the basic well-being of farmers and other stakeholders. Again, without exculpating Chevron from ethical responsibility for its sale of paraquat, I found no evidence from Syngenta scientists similar to this statement from a Chevron scientist: “It seems to me that it is our responsibility to give the public such a warning since we have unique knowledge regarding the toxicity of this chemical.”¹¹⁴

139. With respect to Chevron’s communications with farmers, it used a photograph of individuals preparing to use paraquat in a field but without wearing a respirator or any personal protective equipment.¹¹⁵

140. If we should give more credit to Syngenta scientists for their commitment to society, as Dr. Lewis expects, then why are there no similar statements from Syngenta’s scientists and why would their concern for society be limited to causation?

¹¹² CUSA-00343002

¹¹³ Deposition of Philip Botham, February 15, 2022, at 341-342.

¹¹⁴ SYNG-PQ-01770739; CHEV-SJ0009042.

¹¹⁵ CUSA-00124055

141. Moreover, if we should give more credit to Syngenta for being attuned to society, then why would Syngenta intentionally avoid measuring what might be dangerous?

Q: The last bullet point states: “Avoided measuring PQ levels in the brain, since the detection of any paraquat in the brain (no matter how small) will not be perceived externally in a positive light.”¹¹⁶

142. The structural likelihood of bias within Syngenta (and Chevron) is frankly enormous:

Q: So here we are, in 2001, and the main laboratory is focused on defending registration so that they can hit this target of one billion dollars by 2010, in the sale of paraquat. That is the focus, at least according to these minutes. True?

A: It is what this document says, that we are focused on trying to – and the sales target, but that is not what the laboratory is focused on. We are not focused on the sales target. That is what the company is focused on. End of Story.¹¹⁷

143. As Upton Sinclair once wrote, “It is difficult to get a man to understand something when his salary depends on not understanding it.”¹¹⁸ Without ascribing nefarious intent to Syngenta scientists per se, they are in a situation of both role morality and conformity bias. When confronted with a question of whether they might be biased, they blame others – their “opponents” for their bias. They have framed their relationship to society in a way where it seems – literally – unquestionable, that they are the good guys. This is a recipe for self-deception and given the consequences of a toxic chemical, that self-deception risks harm to others, a result the scientific community believes is an ethical duty to avoid.

144. The risk of bias ranged from the top of the company to those who solely relied on the scientists to provide information to them, and who also knew the importance of being able to continue to sell the product. CEO Bob Woods, in a statement prepared by Sherry Duvall, the company’s communication manager, wrote that “It’s clear that ½ of Syngenta have no experience with this product, and as it is one of the three largest global products, we need to be diligent”¹¹⁹.

145. Moreover, the risk of bias becomes intensified when those questioning the safety of the product become characterized in an us vs them fashion so that Ms. Duvall testified that “I’m

¹¹⁶Deposition of Philip Botham, February 16, 2022, at 380.

¹¹⁷ Deposition of Lewis Smith, October 11, 2022, at 165.

¹¹⁸ Upton Sinclair, I, Candidate for Governor And How I Got Licked (1994)

¹¹⁹ SYNG-PQ-05706488

trying to think of any group that would question our products that would not fall under an Activist label.”¹²⁰

146. Ms. Duvall then testified that:

Q: One of the goals in communicating with those stakeholders was to ‘preserve our license’ and our being Syngenta, right?

A: Yes.

Q: Preserve Syngenta’s license to sell and freedom to operate.

A; Yes.

Q: And freedom to operate, part of that to assure that the company could operate without any restrictions on Paraquat or its use of Paraquat in the United States?

A. : To continue to operate, to continue to have Paraquat registered as a herbicide.¹²¹

147. Andy Cook testified that “Paraquat continues to represent greater than 50% Syngenta’s annual sales in a number of markets and it provides a critical portfolio lever for access to distributor networks in key markets such as the USA.”¹²²

148. To the extent there were contrary findings within Syngenta concerning the safety of paraquat, it was immediately challenged and, in fact, results not reported to the EPA for over sixteen years. I will expand on that sixteen-year gap shortly with respect to the Marks study, but the non-reporting of a negative result for that many years sends a clear signal to others within the organization that unflattering results are not welcome.

149. A similar signal is sent when other scientists, who allege safety issues, are disparaged, their nominations to respected agencies challenged, and outside scientists immediately hired to undermine findings as described elsewhere in this report.

150. It is further sent when statements from the company president place the matter of registration into an us vs them contest in which opposition to Syngenta is not merely a disagreement on science, but a fight to be won.

¹²⁰ Deposition of Sherry Ford, April 13, 2023, at 79.

¹²¹ *Id.* at 71.

¹²² Deposition of Andy Cook, October 19, 2022, at 36

Q: Who is Dave -- sorry, Jon Parr?

A: Jon Parr was the President of Syngenta Crop Protection.

Q. So the president of Syngenta Crop Protection says: "Dave, Team "Thanks for the update, transparency and speed are important." He then goes on to say: "This is an infuriating development. We need to think about getting some farmer groups wound up about this to make life uncomfortable for the Anvisa bureaucrats who have done this." Did I read that correctly?

A: You did.

Q: Okay. So that is a statement from the president of Crop Protection at Syngenta; right?

A: It is.

Q: And he's referring to the development of the ban of paraquat within Brazil.

A: I'm not exactly sure what -- which development he's referring to, whether it's to the AGROW reporting or to the ANVISA decision or the Brazilian ban. I assume it to be the Brazilian ban but I don't know.

Q.: In his text he doesn't say, "Get farmer groups wound up to make life uncomfortable to AGROW"; right?

A: No.

Q: He specifically referenced the ANVISA bureaucrats?

A: He does.

Q: Okay. And the suggestion is that they should get -- or Syngenta should get farmer groups involved to make life difficult for ANVISA, who had issued their decision to ban paraquat; right?

A: That's what I read in the email.

Q: Okay He states: "we have a ticking clock to a ban which we have to stop, which is vastly more difficult than working with the threat of a ban." Right?

A: Yes.

Q: So the direction from the president of Crop Protection Services at Syngenta is: we need to do what we can do stop the ban of paraquat in Brazil. You'd agree with that?

A: Yes, I would.¹²³

151. The sentiments of the President of Syngenta's Crop Protection unit in Latin American reinforces the urgency of the situation:

Q: Who is Valdemar Fischer?

A: He was the Syngenta president of Latin America.

Q: Okay. So now the president for Latin America at Syngenta weighs in and says: "I agree we need to move into crisis mode now ..." Right? Do you see that?

A: Yes, I do.

Q: Okay. That's especially because of potential impact in other countries and the fact that they are banning some uses immediately, which will harm our customers ..." Do you see that?

A: Yes.

Q: Okay. So, one of the reasons why Syngenta needs to go into crisis mode is because of the worry that by Brazil banning the product, other countries might do the same?

A: I think it's a general consideration in the regulation that countries look to other countries, so, yes, I think that was a legitimate concern.¹²⁴

152. Messages such as these from top leaders of the company make it much harder for scientists working for the company to base their work purely on science. Even assuming for the moment that such a focus was the entirety of their intent, pressure from the top is difficult to resist. Indeed, in aforementioned book by Countess Alexandra and myself, our survey of corporate executives said that "tone at the top" was the most important factor in developing and maintaining

¹²³ *Id.* at 274-276.

¹²⁴ *Id.* at 276-277.

ethical business organizations.¹²⁵ Messages from Jon Parr and Valdemar Fischer run directly counter to avoidance of bias, independent science, and ethical culture.

153. Indeed, the record to date does not demonstrate any degree of gratitude, reward or other positive messaging given to any scientist who questioned the safety of paraquat. Without a mechanism for such dissent or challenge, it is very hard to imagine that Syngenta's organization recognized its bias issues or, if it did recognize them, then leaders more nefariously acted in order to do nothing to counteract it.

154. The risk of bias is greater when so much of a for-profit corporation is depending on the sale of that product, yet the lack of being able to even acknowledge the possibility, and instead to redirect bias toward others, itself is a sign of the way Syngenta scientists framed how to determine whether paraquat was safe, how important it was very there to be a solid front making the statement, fortified by no evidence of dissent.

155. More specifically, regarding the work of Dr. Tanner:

Q: Were any of these researchers making a billion dollars a year by selling paraquat, any one of them?

A: What can I say about that?

Q: You indicated earlier that Dr. Tanner was biased. I am asking you, was she making a million dollars or a billion dollars a year, like Syngenta, in the sale of paraquat?

A: I mean, I don't know what to say.¹²⁶

156. Even if one takes Dr. Lewis' statements at face value – namely, that only science was guiding determination of the study of paraquat – the fact that Syngenta attorneys were heavily involved in the creation and reporting of studies introduces professionals with non-scientific criteria to the process of determining paraquat's safety.

157. As will be noted later in this report, Charles Breckenridge called out, to one of Syngenta's attorneys, the need to equip Dr. Smith with all the resources he needed to win a contest with lawyers who would sue Syngenta, indicating that factors other than scientific purity were in play in conducting research.

¹²⁵ ALEXANDRA CRISTINA & TIMOTHY L. FORT, THE SINCERITY EDGE: HOW ETHICAL LEADERS BUILD DYNAMIC BUSINESSES (2017).

¹²⁶ Deposition of Lewis Smith, October 11, 2022, at 192.

158. More troubling is Dr. Smith's insistence that the introduction of lawyers to studies would make a difference to the integrity of pure science, even to the point of insistence that contracts and words on paper are untrue:

Q: the scientists on the Paraquat Health Science Team could not do any paraquat/Parkinson's disease studies without the approval of Syngenta's legal department. Is that the way it was structured?

A: "I can assure you that irrespective what is written here, is absolutely meaningless in terms of how the Health Science Team operated."¹²⁷

159. The insistence that contracts do not represent reality would be further in accord with a bias that does not recognize the influences that operate within Syngenta's work. For example, with respect to consulting employment letter stating that Lewis Smith would report to the General Counsel, Crop Protection:

A: I didn't report to the Head of – it may say that in this, but I can assure you it didn't happen.¹²⁸

160. More broadly speaking, there are other instances in which Syngenta scientists to not seem to be aware of how their own conflicts of interests could impact the science that they undertake. For example, regarding the rejection of Breckenridge paper, one reviewer wrote "the authors have a clear conflict of interest, and I think a more balanced discussion is needed in several places."¹²⁹

161. The lack of awareness of a conflict of interest – which again sheds significant light on the notion of bias – occurs in Dr. Breckenridge's (admirable) declination to serve as a reviewer for a paraquat-related paper, but then instead recommends Syngenta consultants, who had been paid thousands (or more) dollars for their work on behalf of Syngenta on paraquat and Parkinson's issues without informing the editor of the journal:

Q: In the middle of the page, there's an email from you to a Gale Richardson, dated June 7th, 2013, correct?

A: I do see that.

Q: Okay. You said, Dr. Richardson, I've taken a look at the manuscript. I am afraid I have to withdraw from reviewing this manuscript, as my review

¹²⁷ *Id.* at 228-29

¹²⁸ Deposition of Lewis Smith, October 12, 2022, at 26.

¹²⁹ SYNG-PQ-00126975. The article was ultimately published in PLOS ONE.

of it might appear as a conflict of interest since I am employed by Syngenta, a basic manufacturer of paraquat. Right?

A: Yes, sir.

Q: Okay. And that's what we discussed earlier in those previous emails. Now it goes on, and you say, Please find names and contacts information of a number of individuals whom I believe could provide a critical review of this manuscript. And that's what you reported to Gale Richardson, right?

A: Yes. It's normal practice when you decline an invitation to ask for who could review a paper in your stead.

Q: And Gale Richardson – she was the editor of this particular journal?

A: I don't know if he was the editor or just the – a go-to man for parsing out papers that came in.

Q: Okay. And you provided names of some recommendations instead of you because of your conflict of interest, right?

A: Nonemployees of Syngenta.

Q: Okay. And – and understand they're not employees; one of the recommendations was clinical toxicology expert and Dr. Jeff Brent, right?

A: Yes, sir.

Q: Dr. Jeff Brent was a consultant for Syngenta on paraquat-related issues?

A: He did a study for Syngenta.

Q: And that study was the – the poisoning study with respect to Parkinson's disease?

A: That's correct, sir.

Q: You recommended for epidemiology expert, Jack Mandel, right?

A: He was among – yes, sir.

Q: Okay. And Jack Mandel, once again is the core team member of the epidemiology team for paraquat and Parkinson's disease?

A: He was a contractor to Syngenta.

Q: And – and the contractor to – to Syngenta for multiple products and multiple years, right?

A: Indeed.

Q: It's fair to say, Dr. Mandel has made over a million dollars from Syngenta during his time in both atrazine and paraquat?

A: I have no way to verify that statement, sir.

Q: And the last page, for a pathologist a Colin Berry, right?

A: Sir Colin Berry –

Q: Okay.

Q: He is a consultant for Syngenta, correct?

A: He was a consultant to Syngenta.

Q: Did you inform Gale Richardson of the fact that your recommendations were all consultants for Syngenta on paraquat and Parkinson's disease-related issues?

“A: I did not. And David Brooks was not – I don't believe a consultant to Syngenta.

Q: Okay. But with respect to the other three, you did – did not indicate that they had worked for Syngenta, had been paid by Syngenta and had worked on projects for –

A” I did –

Q: -- Syngenta, right?

A: -- I did not.¹³⁰

162. It is remarkable that a reviewer would think that a paid consultant to a company, a consultant who had done specific work on the exact issue for the company, having been paid for such work and, not unreasonably might expect to be paid again in the future for work on the same product and issue would be in any better position to be an independent reviewer than Dr.

¹³⁰ Deposition of Charles Breckinridge, January 18, 2023, at 262- 266 citing SYNG-PQT-ATR-07389723.

Breckenridge himself. This raises question of how Syngenta scientists treated the concept of independence and of conflict of interests as well as revealing an unrecognized bias in the way they approached scientific research related to paraquat.

163. There is also clear evidence of the problem of role morality and conformity bias in Syngenta. The person responsible for providing information to the public, Sarah Hull, specifically claimed to exercise no independent judgment as to whether paraquat was safe:

Q: But that's because. You were told that by Syngenta's own employees, correct? Not because you did anything yourself to out to say, to investigate why are certain researchers and scientists who are not associated with Syngenta finding a link, while those that are hired by Syngenta not finding a link. You didn't do anything to find out, to figure out that little conundrum, did you?

"A: That was not my responsibility at the company. We had science – scientific team that was responsible for them.

Q: Okay, So when you keep saying "accurate information," what you really mean there is what Syngenta told you to say about the link between Parkinson's disease and alleged paraquat exposure, correct?

A: You have no independent knowledge of whether that is actually accurate or not.

A: I relied on the scientists to make scientific assessments of that, which is what they're fully capable of doing. I am not.

Q: And if those scientists are wrong, if Syngenta's scientists are wrong, then the messaging that you were disseminating on behalf of Syngenta was false and inaccurate, correct?

A: I have to rely on the experts in the company that were responsible for the research and the science, who I do trust.¹³¹

164. These are examples of an employee maintaining a narrow focus on what their job was and not going beyond the borders/job description of their assignment and not raising troubling questions to the statements handed down.

¹³¹ Deposition of Sarah Hull, May 1, 2024. at 57-58

165. Insisting that it was not her job, when asked:

Q: And at no point did you stop as communications manager or director and think: If we got this wrong, if what the external independent scientists say is correct, Syngenta is wrong, we're putting an awful lot of farmers and people in harm's way. Did you think about that at all while you were developing these aggressive strategies to counteract this information that was coming out to the public?

A: I think our scientists think about that every day.

Q: I asked about you.

A: I think our scientist think about that every day and, yes, I do rely on what they think about and how they look at these products. They want to make sure they're safe in our customers hands. So, yes, I relied fully on them.¹³²

166. Even though Dr. Tanner said that Syngenta was incorrect in their criticisms of their studies, Syngenta did not mention Dr. Tanner's defenses to farmers.¹³³

167. Similarly, Ms. Hull indicated that the criteria for safety was regulatory approval: "I mean, the implied safety comes from the fact that they are regulated, that they've been thoroughly reviewed by – by regulatory agencies to deem that they are safe."¹³⁴ As noted elsewhere, if the regulatory body is compromised from lack of information, Ms. Hull's assurance becomes suspect.

168. Even though reports by Dr. Beate Ritz and Dr. Sadie Costello concluded that there was a causal relationship, Syngenta did not report because the message to convey would come from the science group.¹³⁵

169. In claiming that certain scientists hired by Syngenta were "independent," it was not deemed necessary to explain to the public that their work was paid for by Syngenta.¹³⁶

170. Nor was Sarah Hull alone in her deference to scientists. Sherry Duvall, who worked as Communications Manager and External Communications Lead for North America stated that:

¹³² *Id.* at 303.

¹³³ *Id.*, at 415-417.

¹³⁴ *Id.*, at 122.

¹³⁵ *Id.*, at 186-89.

¹³⁶ *Id.* at 247-251

A: My only role as a communicator was to make sure that the facts about the product were disseminated to our audiences.

Q: Once again, facts as determined by Syngenta's Science Team

A: Who evaluated very carefully all of the available science.

Q: So that's a yes, facts as determined by the Science Team, right?

A: Yes.¹³⁷

171. Similarly, Ms. Duvall claims to not remember whether she was informed that independent scientists, asked for their views, had indicated that there was a link between Paraquat and Parkinson's.¹³⁸

172. Yet, she totally relied on those Syngenta scientists in informing the public of any potential risks:

Q: When you say facts, that's facts as determined by Syngenta?

A: No, the scientific facts as they are in the scientific literature, available scientific literature.

Q: What scientific literature did you personally review?

A: I'm not a scientist. So I didn't review the literature, but I did rely on our scientists to review the literature and provide that information to me.

Q: Okay. What independent scientists did you reach out to and rely on, anyone?

A: That's a question for the Syngenta scientists.

Q: Okay. So the information—when you say facts related to paraquat and Parkinson's, it's facts as relay to you by Syngenta scientists?

A: That's correct.¹³⁹

¹³⁷Deposition of Sherry Ford, April 13, 2024, at 118.

¹³⁸ *Id.* at 199.

¹³⁹ *Id.* at 224-225.

173. And yes, Ms. Duvall admits that she was not always informed by Syngenta scientists of the entirety of information related to Paraquat. For example, Ms. Duvall disseminated information even though Syngenta's own scientists were unsure as to whether the statements could be supported.

Q: In Syngenta's Position Paper that you sent around to be shared with external audiences, in the paragraph right above Background, it says "This appears to be a mouse strain specific effect." That's what that Position Paper says, right?

A: Okay. Yes

Q: And then Nick Sturgess, a scientist with Syngenta says, "I'm not sure we can fully support that if quizzed on it,' Right?

A: Okay.

Q: And that was the day after you had sent this around to be shared with external audiences, right?

A: Yes.

Q: Do you know whether or not you were informed of the fact that Syngenta could not support the statement?

A: I don't know if I was informed or not.¹⁴⁰

Fairness to Stakeholders/Society

174. There was agreement (for example from Philip Botham) that companies like Syngenta and Chevron have a duty to act responsibly to ensure health and safety of the consumers of their products and to be truthful in dealing with regulatory agencies.¹⁴¹

175. Just as the scientists at Chevron recognized that they had unique knowledge – unavailable to the public – about the dangers associated with the toxicity of paraquat, we can assume that Syngenta did as well. Indeed, as originators and primary formulators of the product, Syngenta undoubtedly has even more, unique knowledge.

¹⁴⁰ *Id.* at 187, citing SYNG-PQ-ATR-05179875.

¹⁴¹ Deposition of Philip Botham, June 17, 2020, at 598.

176. Yet, the only study from 1965-2003 that studied long-term neurotoxicity potential of paraquat was the Naylor study in 1995 until Marks studies, the damaging one of which was not reported to the EPA for over sixteen years.¹⁴²

177. Moreover, Syngenta chose not to report up to thirty studies¹⁴³ that raised serious questions about the safety of paraquat, including the diMonte study, the Mandel/Exponent re-study of the Marks study, and of course, the updated Marks study itself.

178. Syngenta declines to submit full reports of experts even to this day. For example, in response to requests – prompted by a letter from the NGO EarthJustice to the EPA indicating that Syngenta may have additional information that should be reported,¹⁴⁴ Syngenta submitted redacted reports of experts whose science suggested correlations between paraquat and Parkinson’s Disease while submitting in full, reports that aligned with Syngenta’s position.¹⁴⁵

179. Indeed, Syngenta did not even submit the names of scientists so that the EPA could determine whether or not a report from such a scientist would be of value, frequently characterized scientists as being hired as part of litigation and redacted their views so as to make an assessment of their science an impossibility.¹⁴⁶

180. The evidence I have reviewed to date indicates that even of this writing, Syngenta has not provided the full reports,¹⁴⁷ a (lack of) reporting that is contradictory to the values claimed by Syngenta’s scientists *as scientists* as well as the values previously documented in science and in the field of toxicology, let alone with respect to regulatory requirements.

181. I cannot imagine an argument demonstrating that Syngenta is more attuned to society than it is given credit for if it neglects to report studies that indicate risk to society and its stakeholders.

182. Syngenta also declined to undertake studies, such as the possibility of one concerning an amino acid transport system, which could indicate a way that paraquat could breach the blood-brain barrier and therefore enter the brain.

A: I mean, this didn’t happen. We did – had discussions with him and everything else, but it – at the end of the day events overtook it and it was not conducted.

Id. at 526.

¹⁴³ See Exhibit 37, Deposition of Monty Dixon.

¹⁴⁴ Deposition of John Abbott, July 24, 2024, at 155-57, citing Exhibit 18.

¹⁴⁵ *Id.* at 189-200, citing Exhibits 19-32.

¹⁴⁶ *Id.*

¹⁴⁷ Deposition of John Abbott, July 24, 2024, at 256-57.

Q: Okay.

A: They didn't let me do everything I wanted to do.

Q: And again, it's a study, a collaboration you would've liked to do, but you weren't permitted to; correct?

A: Correct. Again, I don't know why, but it was not allowed. Not supported.¹⁴⁸

183. The same refusal occurred with other proposed tests aimed at getting at the heart of whether paraquat breached the blood-brain barrier, in another case with respect to a radiolabeling technique. In explaining the refusal to a potential collaborator, Ted Lock explained that:

Q: He [Lewis Smith] would rather that we not get involved in the work and certainly not supply you with any radiolabeled paraquat. It's is nothing personal...

A: Nothing person, that's right. I mean –

Q: ...just that PQ/PD area is very business sensitive at the current time.

A: Nods head.

A: I think – I think there was enough work being done.¹⁴⁹

184. Regardless of refusals, however, scientists such as Ted Lock understood that the Parkinson's question would not go away: "Again, the Parkinson's link will not diminish, we are stuck with it!"¹⁵⁰

185. In his deposition, Jon Edmond Ford reported of Chevron's 800 number, where they fielded calls from people who had been exposed to pesticides including paraquat:

Q: You spoke about and testified about a phone line or hotline that you were involved with for many years at Chevron, correct?

A: The 800 number.

¹⁴⁸ Deposition of Ted Lock, August 21, 2024, at 129-130.

¹⁴⁹ *Id.* at 203 citing Exhibit 22.

¹⁵⁰ *Id.* at 153.

Q: Yes. And you would receive, as you talked about, various reports of paraquat poisonings at times on that call line?

A: Right.

Q: You would receive calls about, you know, dermal exposure, some serious, some not, correct?

A: Some – yeah, some dermal exposures.

Q: And you also would receive information about poisonings from various sources, folks from ICI might tell you, a colleague might tell you, you might see something in the medical literature about paraquat poisonings; is that true?

A: Right.

Q: My question is, did you ever write and publish anywhere in the medical literature a case report some of these poisonings that you had learned about?

A: No.

Q: Did you ever publish anywhere in the public or the medical literature a case of series where you tried to group together some of the paraquat poisoning cases and write about those in the medical literature?

A: No.

Q: And did you personally – with respect to the paraquat poisoning cases, the dermal poisonings and others that came to your attention, did you ever report those to the EPA?

A: No.

Q: And do you know whether Chevron reported those to the EPA?

A: I don't know.¹⁵¹

186. This unwillingness to report relevant, or at least potentially relevant information to any outside source is consistent with the decisions made by Chevron's partner, Syngenta, in also not reporting such information.

187. In the following section, I will elaborate further on the (in)actions Syngenta and Chevron took to not provide full and fair information to stakeholders and society so they could make their own choices respecting their health.

¹⁵¹ Deposition of Jon Edmond Ford, June 28, 2022, at 285-286.

Respect

188. Syngenta's unilateral determination that the interests of society and its stakeholders are best served by only considering whether a definitive, causative link exists removes the agency of those stakeholders to determine what risks they are willing to take in being exposed to paraquat.

189. Society and its stakeholders are wholly at the mercy of the company and the government to inform them of risks and to protect them from risks. If the company is unwilling to share the nature of those risks and, as will be elaborated upon more fully in the next section, are restricting the information the government has to itself understand and then convey information about the risks, then the company is demonstrating no degree of respect to the farmers and other stakeholders using paraquat.

190. Suggestive of Syngenta's assessment of its stakeholders is its treatment of a claim made in Mexico for benefits compensating a worker for injuries from paraquat. Syngenta devised a plan so that it would respond to the appeal so late so as to be impossible to counter. The worker thereby lost his benefits. If respect means anything, it means to treat another as a human being and not dehumanize them as a cost to cleverly avoid.¹⁵²

191. Syngenta's claim about concern for its stakeholders is, at best, ironic and, at worst, cynical. In language recommended for use related to plaintiffs facing health issues, the company's rhetoric is "Syngenta has great sympathy for the health issues faced by the Plaintiffs and others suffering from the debilitating effects of Parkinson's disease,"¹⁵³ yet in the hundreds of pages of evidence I have reviewed, I have not viewed any such statement from Syngenta employees. Further demonstrating Syngenta's lack of caring for the actual human beings being exposed to paraquat, the company did not notify anyone even after telling them they were safe if they used protective equipment, deferring instead to what the scientists tell them, even if the scientists neglect to live up to the recommendation that they are more attuned to society than one might think.

Q: And then after you learned that, you actually – after. You learned that, you never called China and said, We got a problem here. We're not really

¹⁵²Q: Based on the mistake mentioned in the previous paragraph, the legal area strategy was to pay the IMSS according to the new risk level and not to appeal the new ruling until the last minute possible in order not to give the IMSS time to answer within the allowed timeframe." Did I read that correctly.

A: I see what's written here, yes.

Q: Okay. 'Therefore they could not issue a new corrected resolution under Grimaldo's name linking herbicides and pesticides – and Parkinson's disease.' Did I read that correctly?

A: You did

Q: "okay 'It was a successful strategy.

A: I see that.

¹⁵³ SYNG-PQ-MDL-000979612.

protecting these folks. They're still – they're -- still have paraquat exposure even if we tell them to use the most perfect protection equipment. You never made that call, did you?

A: Sir, I – again, I rely on our toxicologists to make those – those understandings of the data and – and share that.¹⁵⁴

Transparency

192. Syngenta scientists recognized a duty to be transparent in their research findings and to communicate information about health, safety and toxicity in a timely and responsible way.¹⁵⁵

193. Regarding a 16-year gap in turning over evidence:

Q: Have you ever heard of one that gives you 16 years to report a finding?

A: No, sir, I haven't.¹⁵⁶

194. Key principle of Syngenta's Code of Conduct is to "investigate all credible reports of previously unknown short and long-term effects associated with the correct use of our products, to take appropriate actions, and to publicly disclose research and development results of significance in an objective and accurate way."¹⁵⁷

195. Yet even though there was evidence of paraquat breaching the blood-brain barrier, the company did not notify the public.

Q: Have you or have you not, Syngenta, sent a letter, an email, a direct communication saying, "By the way, when the purchaser/end-users of our product, farmers, applicators, use it, it gets into the human brain?" Have you done that?

A: No, we have not sent such a direct communication, in the same way—

¹⁵⁴ Deposition of Clark Ouzts, February 22, 2022, at 143.

¹⁵⁵ Deposition of Philip Botham, June 17, 2020, at 600.

¹⁵⁶ Deposition of Timothy Patterson, January 22, 2021, at 76.

¹⁵⁷ Deposition of Philip Botham, June 17, 2020, at 614.

196. Moreover, Syngenta took steps to make sure that problematic evidence was hidden through an aggressive use of attorney-client privilege as evidenced in an email from Jonathan Sullivan, at attorney for Syngenta, of March 27, 2008.

Q: Please can we call a halt to this correspondence. Any claim of privilege which we make with respect to it may be challenged and will not be well served by the production in litigation [that is a lawsuit] we will not be well served by the production in litigation of correspondence which suggest that we would not have carried out the studies but for the threat of litigation.” Is that what your lawyer told you?

A: That is what the lawyers says in this memo.¹⁵⁸

197. More will be said about this kind of use of attorney-client privilege, but the evidence demonstrates that this was a company strategy:

Q: This will allow us to argue that the materials are privileged from disclosure, although there is no guarantee that this argument will be successful as it is reasonably clear that the materials will not come into existences for the dominant purpose of being used in connection with litigation that is either contemplated or pending and at least questionable whether they will be generated for the purpose of seeking legal advice or assistance.” Do you see that?

A: I do.¹⁵⁹

Honesty

198. At a minimum, one would expect Syngenta scientists to accurately and honestly report scientific findings to regulatory agencies that not only have the responsibility to protect the public from harms, but are pointed to by Syngenta has having that role, a role that is impossible for the agency to perform if the company itself is providing inaccurate information to it. Thus, for example, when Kim Travis claims that eighty percent (80%) is equal to one hundred percent (100%), Syngenta is failing to report accurately and honestly to the EPA and makes Syngenta’s rote cliché that the product is safe because it complies with regulatory standards ring hollow.¹⁶⁰

199. Syngenta represents itself to its stakeholders and the public and in so doing, establishes its brand. Syngenta can choose what they want to say in its Code of Conduct and its publicly issued statements of conduct (“PISC”) or say nothing at all. “They should, however, live

¹⁵⁸Deposition of Lewis Smith, October 11, 2022, at 217.

¹⁵⁹Deposition of Alan Nadel, May 3, 2024, at 42-43.

¹⁶⁰ SYNG-PQ-01208793_R

up to whatever public promise they make, including those that do, in fact, claim a commitment to health.”¹⁶¹

200. “Brands are, ethically speaking akin to promises. And, as we noted, an analytical feature of promises is that they generate obligations. Thus, we argue, brands generate obligations.”¹⁶²

201. At a minimum, Syngenta and Chevron should be held accountable for adhering to the publicly issued statements of conduct. Those statements are promises made to the public creating a set of expectations of how the company will interact with them and, upon which the public can determine the extent to which they trust the company.¹⁶³

Codes of conduct provide a signal to a company’s commitment to ethical and socially responsible corporate behavior and strategically deployed, are specifically pointed toward constituents that matter, constituents such as shareholders, employees, and customers interested in the company’s products and services. If this is the case, however, then a PISC is being offered as a reason for a constituent to main a relationship with the company. This further reinforces the notion that those constituents have reason to rely on the statements made by companies and create an obligation for the company to at least not directly act in contradiction to the statements made in a PISC.¹⁶⁴

202. The front page of Syngenta’s Code of Conduct states: “our commitment to act ethically and responsibly in business and in the workplace.”¹⁶⁵

203. The Syngenta Code of Conduct also states that “Syngenta managers must create a safe environment for Syngenta employees to speak-up.”¹⁶⁶ Yet, at least from the record available, there is no instance of a Syngenta scientist or other employee warning against the dangers of paraquat, other than Louise Marks, whose studies were hidden from regulatory authorities for over sixteen years. Not only does this implicate issues of conformity and role morality bias, as noted

¹⁶¹ Joshua E. Perry & Timothy L. Fort, *PISC in the Wind: Holding Healthcare Organizations Liable for Publicly Issued Statements of Conduct*, 70 AMERICAN UNIVERSITY LAW REVIEW 167, 199 (2020).

¹⁶² Vikram R. Bhargava & Suneal Bedi, *Brand as Promise* 179 JOURNAL OF BUSINESS ETHICS 919, 921(2022).

¹⁶³ See generally, Joshua E. Perry & Timothy L. Fort, *PISC in the Wind: Holding Healthcare Organizations Liable for Publicly Issued Statements of Conduct*

¹⁶⁴ *Id.* at 197.

¹⁶⁵ Syngenta Group, 2020 *Syngenta Group Code of Conduct*, https://www.syngenta.com/sites/syngenta/files/company/group/code-of-conduct/SYN-GRP-CofC-2020_English_LR.pdf.

¹⁶⁶ *Id.* at 5.

earlier, but it also implicates whether Syngenta is honest in stating its commitment and/or whether it fails to adhere to the promises it makes.

204. Further, the Syngenta Code of Conduct states, under the category of integrity, “we always maintain the highest standards of fairness, honesty, and integrity. This earns us the trust of our stakeholders and protects our reputation.”¹⁶⁷ Yet, it is difficult to think how a farmer would trust a company which systematically and insistently claims that only proof of causation is grounds for notifying a farmer of paraquat’s dangers.

205. Further, in its 2019 report, *Accelerating innovation in a changing world*, Syngenta claims its focus is for the farmers, its customers: “All this innovation has one focus: a passion for our customers, the farmers who grow the world’s food.”¹⁶⁸ Again, if the company’s passion is for the farmers, it would seem that the company would full convey possible – indeed, given the totality of research, even likely – harm the farmers may experience.

206. In claiming its commitment to the safety of its customers, the farmers, Syngenta states, under the category of Research and Development: “We publicly disclose research and development results of significance in an objective an accurate way.”¹⁶⁹ Moreover, the company claims that “we recognize our responsibility to develop products that are safe and sustainable, and to steward them carefully.”¹⁷⁰ Yet, only certain research – research favorable to the continued sales of paraquat – are fully disclosed to farmers.

207. In claiming the value that it places on farmers and the rural communities in which its products are used, Syngenta, in its PISC, *Contribution to Responsible Agriculture* states “Syngenta values farm work and sees the people in rural communities as our business partners.”¹⁷¹

208. Yet, Syngenta formally reports information to farmers that is untrue:

Q. Paraquat does not enter the brain.” That’s something that cannot be said, according to this document, right?

A: Yes, that’s the way it reads.

¹⁶⁷ *Id.* at 12.

¹⁶⁸ Syngenta, *Syngenta 2019 Sustainable Business Report Accelerating Innovation In A Changing World*, 2020, at 4, https://www.syngenta.com/sites/syngenta/files/company/Syngenta_SBR19.pdf.

¹⁶⁹ Syngenta Group, *Syngenta Group Code of Conduct, SECTION 18 RESEARCH AND DEVELOPMENT*, at 24, 2023 (original publication date 2020).

¹⁷⁰ *Syngenta 2019 Sustainable Business Report Accelerating Innovation In A Changing World*, 2020, at 4, https://www.syngenta.com/sites/syngenta/files/company/Syngenta_SBR19.pdf.

¹⁷¹ Syngenta International AG, *Syngenta Contribution to Sustainable Agriculture*, Ed. April, 2013, <https://www.yumpu.com/en/document/read/15101067/syngenta-contribution-sustainable-agriculture>

Q: Another thing Syngenta cannot say is that “Paraquat does not cause any changes in the brain. That’s what this says, right?”

A: Yes.

Q: “Paraquat only causes effects in the mouse.” That’s something that Syngenta cannot say at this point, right?

A: According to this, yes.

Q: It cannot say, “The mouse data on Paraquat are not relevant to humans.” That’s another thing that Syngenta cannot say?

A: According to this.

Q. There’s one that, “People are not exposed to Paraquat. There are no data reporting that paraquat may be associated with Parkinson’s Disease in humans. And we cannot say, “The data show that Paraquat does not cause Parkinson “Disease in humans.” Right? ...

A. That is what this says, yes.¹⁷²

209. Even though Syngenta itself was cautioning that such representations could not be made, Syngenta’s position statements claim that there was no increased risk to humans.¹⁷³ It is hard to square a commitment to being truthful to an allegedly, valuable stakeholder – farmers – with statements so word smithed as to obfuscate the reality of Syngenta’s own scientific findings.

210. Moreover, if Syngenta’s commitment to the well-being of farmers were true, one might expect that the company would caution farmers that the organization, Physicians for Social Responsibility (a group identified as “activist” by Syngenta’s consulting partner, v-Fluence)¹⁷⁴ warned about the safety of Paraquat and Dole Food company decided to stop using it.¹⁷⁵

211. Further, in PowerPoints slide under the title of “Golden Rules for Managing the Reputation: “Our stakeholders’ perception is our Syngenta reputation. Clear and simple rules help support our brand and protect our reputation.”¹⁷⁶ Yet, any reading of the statements Syngenta makes obfuscate any negative research, thus violating the directive for clear and simple rules.

¹⁷² Deposition of Sherry Ford, April 13, 2024, at 184-185, citing SYNG-PQ-00481037.

¹⁷³ SYNG-PQ-29317549

¹⁷⁴ SYNG-PQ-32519627

¹⁷⁵ SYNG-PQ-09029808

¹⁷⁶ SAG00040280

212. For example, in 1983, Chevron and Syngenta debated changing the labeling on paraquat to provide additional warnings to farmers and other end-users with respect to risks of fatalities in using the product, a change that was required by the EPA. ICI/Syngenta opposed such changes. ICI/Syngenta's head of product safety advised Chevron not to change the label: "These label changes would go unnoticed unless we draw attention to them." In his deposition response, Philip Botham states that "Yes, and this is another of those emails where, I think, again, looking through – looking at this through today's lens, this is certainly not the way in which we would tackle this problem right now."¹⁷⁷

213. Yet, the label approved by the Environmental Protection Agency in 2015, on which Syngenta relies for when paraquat can be used safely, runs a full ninety-two pages.¹⁷⁸ Perhaps those whose profession is enmeshed in reading documents – such as lawyers – do not find it daunting to read and absorb the contents of a nine-two page label (though I am willing to bet that most lawyers themselves do not read the contents of the adhesion contracts provided by Apple, Microsoft, or Samsung before downloading software), but expecting the typical paraquat user to do so—i.e., farmers, applicators, laborers who must treat acres of land during peak agricultural seasons—is beyond realistic.

214. As noted earlier, there is evidence that Chevron, at least, was aware of the dangers of paraquat and sought to do "something" to protect the public.

I believe that we should take the initiative and put the skull and bones and the word "poison" on the label. It seems to me that it is our responsibility to give the public such a warning since we have unique knowledge regarding the toxicity of this chemical. The public at large would be prone to handle the chemical the same as other products falling within the class of chemicals carrying the type of warning now used. It seems to me that such a warning is not adequate for this chemical due to its unique poisoning properties and the absence of any practical antidotal treatment.¹⁷⁹

215. More specifically, "We have a responsibility to ensure that our recommendations for safe use are clearly put over on our product labels and literature. However, we have to acknowledge that users will not always follow our recommendations. Misuse is a problem for all products."¹⁸⁰

216. On awareness of gaps in knowledge, citing letter from Dr. Cavalli, ten years after Chevron began selling Paraquat "The animal studies available are old and do not meet current

¹⁷⁷ Deposition of Philip Botham, September 17, 2024, at 295-297 (citing Exhibit 43 [SYNG-PQ-13120361]).

¹⁷⁸ Exhibit 25, Deposition of Monty Dixon, July 11, 2024.

¹⁷⁹ SYNG-PQ-01770739; CHEV-SJ0009042

¹⁸⁰ CUSA-00073464

standards.... some are poorly done.... The cause of death from chronic exposure to paraquat could not be determined from these studies.”¹⁸¹

Accountability

217. Syngenta has designed a system that exempts itself almost entirely from accountability. Multiple examples of how individuals cannot comment upon the work or findings of any other part of the company will be noted throughout this report, the testimony of Monty Dixon provides a good summary.

218. As noted throughout this Report, Syngenta insists that the standard by which paraquat should be evaluated is whether it definitively causes Parkinson’s Disease. As noted in the testimony of Monty Dixon, this insistence thereby substitutes for the regulatory requirement to submit reports and expert opinions regardless of whether causation is established. This substitution for required submissions results in the absence of as many as thirty reports, the redaction of other (negative) reports, can report on positive reports from the WHO¹⁸² but cannot comment on negative safety messages from WHO for Syngenta,¹⁸³ He cannot recall who would determine whether a report should be reported other than through a committee, whose decisions were not recorded, and the process for how a decision would be made (such as by majority rule) might have happened.¹⁸⁴ He would not be able to provide a conclusion as to whether an expert opinion might be reportable because it was a legal conclusion and he was not a lawyer, but such a conclusion would be required in order to comply with FIFRA.¹⁸⁵ He and Syngenta limited the number of reports to submit because it would be “very impractical” for the EPA, yet can only cite that he was “anecdotally aware” of this EPA preference in contravention to the requirements of the regulations.¹⁸⁶

219. As recently as 2005, Syngenta had the opportunity to undertake a study to determine whether the brain could be exposed to paraquat through the olfactory bulb, but Syngenta scientist instead said that “the problem is that any positive finding would be reportable so do we really want to go there?”¹⁸⁷ It is exactly statements like this that suggest that Syngenta would exercise similar lack of caring about conflicts of interests, about the well-being of farmers and other end-users today just as such statements were made 50 years ago.

220. These previous paragraphs are a complete abandonment of accountability. As demonstrated by Syngenta’s actions: no person, no committee, and no company is accountable for any decision, any report, or any compliance with its obligations. And yet, Syngenta claims that the

¹⁸¹ CUSA-00189779

¹⁸² Deposition of Monty Dixon at 62.

¹⁸³ *Id.*

¹⁸⁴ *Id.* at 265-268, 285.

¹⁸⁵ *Id.* at 348-249.

¹⁸⁶ *Id.* at 434-435, 451.

¹⁸⁷ SYNG-PQ-01980100

health of farmers is protected merely because the regulatory body, to which it has exempted itself from accountability, has said so.

Integrity

221. Aristotle considered integrity to be a holistic virtue. An integer is a whole number. To integrate is to bring things together. On this basis, my documentary assessment shows that Syngenta and Chevron have failed the test of integrity. They have not been honest in doing what they say they will do. They have not been transparent. They have not respected the human beings exposed to paraquat. They have not treated their stakeholders and society fairly. They have not taken steps to prevent their own self-deception caused by bias. They have exempted themselves from accountability.

B. In nearly textbook fashion, Defendants placed profit before science.

222. In addition to analyzing Syngenta's and Chevron's actions according to the overlap of scientific ethics and business ethics, I also apply a model that comes directly from the scientific literature itself.

223. In the scientific journal, PLOS ONE, a journal in which Syngenta scientists publish, a 2021 peer-reviewed article, based on a literature review, developed an analytical model for how corporations influence science.¹⁸⁸

224. This model grew out of a stream of research, at least twenty years in the making, that assessed the strategy and tactics used by corporations to “purposefully-create misinformation, doubt, and ignorance (or “agnogenesis”) -, *inter alia*, obscure the harms of industry products and practices, and oppose environmental, occupational and public health regulation that could threaten corporate profits.”¹⁸⁹

225. A study published in 2005 showed that corporations, whose products are regulated by public health and environmental agencies, “influence public opinion by ridiculing scientists whose research threatens powerful interests, irrespective of the quality of those scientists research.”¹⁹⁰

226. Rooted in strategies adopted by the tobacco industry, the authors note the same message “Doubt is our product since it is the best means of competing with the ‘body of fact’ that exists in the minds of the public. It is also the means of establishing a controversy.”¹⁹¹

¹⁸⁸ Legg T, Hatchard J, Gilmore AB. The Science for Profit Model-How and why corporations influence science and the use of science in policy and practice. PLoS One. 2021 Jun 23;16(6)

¹⁸⁹ *Id.* at 2.

¹⁹⁰ David Michaels & Celeste Monforton, *Manufacturing Uncertainty: Contested Science and the Protection of the Public's Health and Environment*, 95 (Supp.1) AMERICAN JOURNAL OF PUBLIC HEALTH S39 (2005).

¹⁹¹ *Id.* at S 40

227. The analysis was given further robustness and structure in a 2010 study, which analyzed corporate documents released through litigation, to “systematically examine the strategies each industry used to manipulate research in ways that would promote their products or create doubt about the deleterious health effects of their products and manufacturing processes – thereby enhancing their credibility and profits and shielding them against unwanted regulation or legal liability.”¹⁹²

228. These studies, along with several others¹⁹³ are part of a stream, of which “The Science for Profit Model” stands as the most rigorous, comprehensive as well as having been subjected to a peer review process through, and published in, a scientific journal.

229. The Model argues that corporations use five “Macro Strategies”: influence the conduct and publication of science to skew evidence basis in industry’s favor; influence the interpretation of science to undermine unfavorable science and create a distorted picture of the evidence base; influence the reach of science to create an “echo chamber” for industry’s scientific messaging; create industry-friendly policymaking environments which shape the use of science in policy decision-making in industry’s favor; and manufacture trust in industry and its scientific messaging.¹⁹⁴

230. The model further subdivides the five “macro strategies” into nineteen “meso strategies” as follows: undertake safe research; covertly undertake or prevent risky industry research; control design and analysis of industry-funded science to ensure favorable results; shape and undermine external research; ensure favorable research is heavily represented in the evidence base; control reporting and suppress publication of unfavorable science; develop and promote criteria and concepts for critiquing science which can be used to further industry arguments; obtain and re-analyze raw data from unfavorable science; attack and misrepresent science; monitor and attack scientists and organizations; use legal means to protect industry evidence from being discovered or accessed; contract messengers to create scientific echo chamber; fund, produce and disseminate materials which package science in industry-favorable ways; use education, events, and meetings to disseminate industry-favorable scientific messages to key stakeholders; maximize press coverage of industry favorable scientific messages; implement and utilize industry-friendly standards of evidence in regulatory decision-making; secure and utilize policy making reforms which increase reliance on and provide a conduit for industry-favorable evidence; manufacture a picture of industry credibility; and conceal industry’s involvement in science, scientific messaging, and influence on policy reforms that affect the use of science.¹⁹⁵

¹⁹² Jenny White & Lisa A. Bero, *Corporate Manipulation of Research: Strategies Are Similar Across Five Industries*, 21 STANFORD LAW & POLICY REVIEW 105, 105-106 (2010).

¹⁹³ See, e.g., DAVID MICHAELS, *THE TRIUMPH OF DOUBT: DARK MONEY AND THE SCIENCE OF DECEPTION* (2020).

¹⁹⁴ Legg T, Hatchard J, Gilmore AB. The Science for Profit Model-How and why corporations influence science and the use of science in policy and practice. PLoS One. 2021 Jun 23;16(6)

¹⁹⁵ *Id.*

231. Exhibit C sets out these macro and meso strategies along with evidence derived from a documentary analysis of discovery reviewed to date in this litigation.¹⁹⁶

232. The first strategy of the Science for Profit model is that companies influence the conduct and publication of science to skew evidence in favor of the industry, or in this case, the company.

233. Though deponents sought to avoid the term “influence strategy,” the documents indicate that it was exactly that:

Q: And ‘influencing strategy’ was a strategy intending - - intended to influence publications, scientists around the world, wasn’t it?

A: As written that would be what it suggests it – yes, yes.¹⁹⁷

234. More specifically, the strategy entailed engaging the media, government and prominent NGOS.

Q: In 2007, Syngenta’s answer to what the scientists were saying was to put together a strategy, a strategy to influence the media, a strategy to influence governments and a strategy to influence non-governmental entities, such as the Michael J. Fox Foundation, charitable entities that oppose paraquat. That was their answer was it not, an influencing strategy?

A: I don’t recognize that as being the strategy. I think the major thrust of the strategy was to carry out good quality science in order to establish whether or not there was a meaningful relationship between the toxicity of paraquat and Parkinson’s disease.¹⁹⁸

235. Further, the influencing strategy was intentional and, as noted earlier, framed in an us-them battle of Syngenta against those who warned about its safety: “Our job is to simplify, to tear away the unrelated, to public out the weeds that are smothering the product message.”¹⁹⁹

¹⁹⁶ The Model also details many “micro-strategies.” I have left these to the side in favor of a specific assessment of the fit of Syngenta’s and Chevron’s actions from this case’s evidence to date. With respect to the micro-strategies, *see Id.*

¹⁹⁷ Deposition of Philip Botham, February 26, 2020 at 325.

¹⁹⁸ Deposition of Lewis Smith, October 11, 2022, at 205.....and further quoting a letter from Smith “Q: I have set up a team to deliver a program of influencing activities opposite to key target groups, such as governance, NGOs [which are non-government organizations], media.” Is that what you stated? A: That is what I stated.” Deposition of Lewis Smith, October 11, 2022, at 209.

¹⁹⁹ SYNG-PQT-ATR-02461627

236. That included hiring a consulting firm – V-Fluence – to monitor the media, NGOs, and other activists and to “educate” consumers, of course, on the basis of the version of science Syngenta chose to release.²⁰⁰

237. The material I reviewed with respect to V-Fluence strongly suggests that it viewed the issues associated with paraquat as an us-vs-them battle, an orientation not conducive of dispassionately determining and conveying facts, but as a battle between Syngenta and “activists.” For example, in its November, 2022 Briefing to Syngenta, V-Fluence characterized the history of paraquat and activists in the first full, substantive sentence: “Activist group attacks...”²⁰¹ The report goes on to characterized opposition of these activist groups to paraquat, such as the Physicians for Social Responsibility as an “activist group” and another as a “socialist-leaning organization.”²⁰² In documenting this, I am not suggesting that these groups also did not seek to pick a fight with Syngenta; I am suggesting that Syngenta embraced the battle, a contest in which dispassionate fact-finding and communicating is difficult to do.

238. As already noted, both Syngenta and Chevron avoided studying whether blood reached the brain,²⁰³ but in addition, Syngenta took on a study of workers that would “check the box” of seeing if those people were exposed to risk, but by morality study rather than morbidity study, likely underplayed the risk and thus skewed evidence in the company’s favor and also was kept from the knowledge of the workers so as to not stir up concern. The study was rejected by three journals.

A: A decision was made to pursue a mortality study in the first instance, because it was something that could be done relatively quickly and was relatively straightforward to do. To do the morbidity study was a much more significant undertaking, and a decision was made to look at the outcome of the morbidity study first....and further, did not tell workers about the study (301) because it would have been a lot of risk for little reward but would satisfy a question that the company had looked at its workers.²⁰⁴

239. As noted earlier, Syngenta also declined – or at least has delayed – studying the major research questions,²⁰⁵ did not proceed to follow up on the study of paraquat in monkeys’ brains,²⁰⁶ and

²⁰⁰ Deposition of Sherry Ford, April 13, 2023, at 229-240.

²⁰¹ SYNG-PQT-ATR-02461627

²⁰² *Id.*

²⁰³ Deposition of Timothy Patterson, March 4, 2020, at 195-196.

²⁰⁴ Deposition of Clive Campbell, March 1, 2022, at 287, 302, 304.

²⁰⁵ Deposition of Philip Botham, February 15, 2022, at 341-342

²⁰⁶ Q: After this monkey brain study, when you found that after eight weeks the paraquat was not leaving the brain of the monkey, did you ever again do a follow-up study to look and measure inside the brain to see what was happening at 15 weeks, 20 weeks, 50 weeks?

A: We did not, no. Deposition of Philip Botham February 16, 2022, at 371.

avoided measuring levels in the brain.²⁰⁷ This corresponds to the second level of Science for Profit: Covertly undertake or prevent risky industry research.

240. As noted earlier, the company made a last-minute submission, objecting to the Mexican government's consideration of awarding benefits due to a worker's injuries due to paraquat exposure.²⁰⁸ It also participated in a public-private partnership to create a new risk-assessment model – HESI-RISK 21, and as will be commented upon further, hired one of the EPA employees to continue to work on the assessment tool. These steps fit meso-strategy three of the Science for Profit model: Control the design and analysis of industry-funded science to ensure favorable results.

241. Syngenta also took proactive steps to undermine research that raised questions about the safety of paraquat, including paying four thousand dollars (\$4,000) to Gary Miller to write an editorial criticizing the Tanner study²⁰⁹ and hired multiple other consultants to understand opposing studies as well. This accords with Meso Strategy four of the Science for Profit model: Shape and Undermine External Research.

242. Similarly, the company recruited four different laboratories to conduct studies on the mouse model²¹⁰ as well as paying one hundred sixty thousand dollars (\$160,000) to Exponent,²¹¹ and the hiring of Sir Colin Berry.²¹² This accords with Meso Strategy 5 of the Science for Profit Model: Ensure that favorable research is heavily represented in the evidence base.

243. Meso Strategy 6 identifies the control of reporting and suppressing of publications of unfavorable science. This has already been documented in the sixteen year delay of reporting the updated Marks study, the undertaking of the “safe” Widnes study, the Exponent reanalysis of the Tanner study, the failure to report the DiMonte evidence, the failure to report the monkey brain study to regulatory authorities, the failure to report the reanalysis of the Tanner study and, with respect to Chevron, its failure to not report its view that past studies were poorly done.

244. The evidence I have reviewed suggests that developing a research strategy that would overturn past, problematic research was exactly the aim of Syngenta scientists:

²⁰⁷ *Id.* at 380.

²⁰⁸ Deposition of Alan Nadel, May 4, 2024, at 152-53, citing Exhibits 13 through 16.

²⁰⁹ Deposition of Kim Travis, October 18, 2022, at 125-126.

²¹⁰ Q: All in, how many different third parties were used to conduct this research to better understand the mouse model?

A: All in, you have Will, you have RTI, you have EPL, and Mark Butt, so four different groups.” Deposition of Lewis Smith, October 11, 2022, at 102.

²¹¹ SYNG-PQ-01058471_R

²¹² SYNG-PQT-ATR-07389723

Q: You later on, go to write, what we want to do is brush aside 10 years of research by others and replace it with our own. That's what you said, right?

A: Let me just see where you say that. Where do read that?

Q; It is the first paragraph, the second-to-last line.

A: Okay. We say that we will conduct very comprehensive and consistent approaches, use tremendous resources, and we will sue that data to create a position of what we believe the truth to be.

Q: Understanding you said that, what you also reported was you wanted to brush aside 10 years of research by others and replace it with your own, right?

A: By that, I probably meant – I should be that that – I don't know what I probably meant in 2000-, whatever, '8

Q: The 10 years of research you're referring to are the – the 10 years of research showing a link between paraquat and parkinsonism, right?

A: Animal studies that reported such a thing. I know it was our expectation that – on the team that we would easily replicate those findings.

Q: The – the 10 years of research by others – those were outside researchers in which Syngenta had no connection with?

A: I believe we didn't have any connection with those individuals, yes.

Q: Syngenta didn't pay for their studies in any way?

A: I don't know what Syngenta did in the history of --- of the product.²¹³

245. The second macro strategy entails influencing the interpretation of science to undermine unfavorable science and create a distorted picture of the evidence base.

246. Meso Strategy 7 pertains to the development and promotion of criteria and concepts for critiquing science which can be used to further industry arguments. In this, Syngenta, has

²¹³ Deposition of Charles Breckenridge, January 18, 2022, at 110-112, citing Exhibit 5.

focused heavily that only causation counts.²¹⁴ Yet Syngenta does acknowledge that associations – or correlations – could develop into causations.²¹⁵

247. I leave to others the determination of whether, under regulatory requirements, only causation counts as acceptable justification for claiming that a product does not pose danger to the public, though the plain language provided by the Environmental Protection Agency indicates that causation is not standard relevant for submission of materials. In its April 3, 1998 Guidance, the EPA stated that, differing from the past (pre-1998), an allegation must still be reported even if causation is not established.²¹⁶

248. I further leave to others the determination of how difficult it may be for anyone to fully prove correlations and their relationship to causation, yet again the plain language of the EPA's Guidance to registrants provides that conclusions or opinions of experts must be submitted if "the registrant knows, or should reasonably know, that the information, alone or in conjunction with other information, might raise concerns about the continued registration of a pesticide or about the appropriate terms and conditions of registration of a pesticide."²¹⁷

249. I raise the previous two points not to render a legal assessment or opinion, but instead to question just how attuned Syngenta is to society. If members of society are concerned about their health – and how could they not be – then failing to provide information to the regulatory body on which society depends violates society's trust. Moreover, if Syngenta did have questions as to whether something might be relevant to public health, the aforementioned EPA Guidance specifically "encourages" the registrant "to either submit the opinion or contact the 6(a)(2) Officer in the Office of Pesticide Programs."²¹⁸ Yet, according to Monty Dixon, Syngenta never availed itself of this resource to assure the health and well-being of members of society.²¹⁹

²¹⁴ Q: I want to just focus very narrowly on the – in the absence of epidemiology establishing to your satisfaction, a causal link is the only conclusion that can be drawn is that Paraquat can be used safely by farmers?

A: ***I think we came to the reasonable conclusion that Paraquat could be used safely because we have no evidence to the contrary. Deposition of Lewis Smith, October 12, 2022, at 89.

²¹⁵ Q: And all I am trying to say here, Doctor – and I think you will agree with me on this – before there is a causal connection that is established, there is an association that is established. It is like a precursor to causation, correct?

A: Yes.

Q: And so associations may develop into causation or associations may not; correct?

A: That's correct. *Id.* 77.

²¹⁶ Guidance on Final FIFRA 6(a)(2) Regulations for Pesticide Product Registrants at 7 (April 3, 1998).

²¹⁷ *Id.* at 8

²¹⁸ *Id.* at 9.

²¹⁹ Deposition of Monty Dixon, July 11, 2024, at 204.

250. If one asserts that they are more attuned to society than people give credit for, the insistence on causation and the failure to submit studies and materials on the basis of their not demonstrating causation seems to fall far short of concerns the public has for their life and health and that of their children.

251. Moreover, the causation-only model carries weight only when the manipulation of the regulatory agency is not involved. Yet, the evidence demonstrates that Syngenta was regularly attempting to influence the regulatory bodies by withholding of evidence and, as shown later, by use of the revolving door.

252. In addition, the effort to develop a new tool for risk assessment – the HESI-RISK 21 – could be a genuine attempt for better science, but as again will be noted in the following section, if that criterion produces more registrations, then it does raise the issues of motives – and bias – by which Syngenta engages in the effort.²²⁰

253. The next Meso-strategy is to obtain and re-analyze the raw data from unfavorable science. In one respect, this applies to the Marks studies, but because those were internal to Syngenta, they do not have as nefarious of a connotation as does the effort to debunk the Tanner study through a reanalysis done by Exponent, which ironically essentially upheld the findings of the Tanner study.²²¹

254. Meso Strategies Nine and Ten both have to do with attacking and even misrepresenting science and scientists. Here, Syngenta, monitored the work of Dr. Cory-

²²⁰ Q: So – so – so this exposure-based risk accept –acce – assessment paradigm was going to help Syngenta get new pesticides on the market and to maintain the registrations for its current pesticides, right?

A: Focus on risk allows one to have a much more accurate and efficient evaluation program that address the – the risk management needs of a regulatory agency.

Q: And by doing that, that would enable Syngenta, to achieve our imperative of moving to 2 new Ais per year and successful re-registrations, right?

A, That would be the goal. March 22, 2024 deposition of Douglas Wolf at 88

²²¹ Hired biostatisticians from Exponent to reanalyze the Tanner data (403) with the result. ...

Q: Sir, as a matter of fact, you were the one that actually had to make the PowerPoint presentation to the leadership committee, telling them that: 'We reanalyzed the Tanner data. We looked at incidence, and there is a 250 percent increase in the risk of PD among paraquat workers.' We're you the one that delivered that message to the leadership committee?

A: I was, certainly, Deposition of Philip Botham, February 16, 2022, at 404-405.

Slechta,²²² undermined her appointment to the Science Advisory Panel,²²³ as well as her nomination to the advisory panel of the National Science Foundation.²²⁴ As will be noted shortly, most of these oppositions were undertaken by subterfuge rather than directly.

255. As previously noted, Syngenta also monitored the works of Dr. Tanner and Dr. DiMonte.

256. The Macro Strategy is to influence the reach of science to create an echo chamber for industries' scientific messaging.

257. Meso Strategy eleven calls for the use of legal means to protect the company from evidence from being discovered or accessed. This has already been noted in the extensive attempt to use attorney-client privilege to hide consideration of scientific positions.²²⁵

258. Syngenta also paid several scientists to write letters to the editor and to publish other articles in an effort to discredit the work of other scientists in favor of their own echo chamber.²²⁶ These along with Dr. Wolf's recruiting of a graduate student to write favorably about Syngenta's research constitute Meso Strategy 12 (contract messengers to create scientific echo chamber) and 13 (Fund, produce, and disseminate materials which package science in industry-favorable ways).

259. Syngenta sought to disseminate information to key stakeholders, including creating a partnership with The Economist,²²⁷ considering a partnership with the New York Times and attempting to work with a journalist critical of paraquat,²²⁸ joining in the creation of a public-private

²²² A: We were monitoring the work of scientists, laboratories that were involved in looking at the possible association between paraquat and Parkinson's disease.

Q: Dr. Cory-Slechta, her research and publications with respect to paraquat and Parkinson's disease were a threat to your business. True?

A: Only if ultimately that line of research and the epidemiology that we were talking about earlier would have come to a clear outcome of there is a causative link. *Id.* at 465.

²²³ SYNG-PQ-05705351

²²⁴ Deposition of Philip Botham, June 17, 2020, at 696.

²²⁵ SYNG-PQ-31434771; SYNG-PQ-31449369

²²⁶ Q: Dr. Mandel, Dr. Cavalli, Dr. Brent, Dr. Smeyne, Dr. Tomenson. These folks all wrote articles that you paid for them to write, true?

A: They were all paid consultants, that is true. Deposition of Philip Botham, February 16, 2022, at 417.

²²⁷ SYNG-PQ-MDL-000403887

²²⁸ Deposition of Sarah Hull, May 1, 2014, at 371 (considering a partnership with the New York Times); *see also*, 401-406 (on keeping tabs on article being published by writer for the New York Times).

partnership to advance HESI-RISK21²²⁹ and creating a social media search engine to bring favorable news about paraquat to the top of a search and to minimize negative stories.²³⁰ These strategies are part of the Science for Profit Meso Strategy 14 and 15.

260. The fourth Macro strategy is to create industry-friendly policymaking environments which shape the use of science in policy decision-making in industry's favor.

261. Meso strategy 16 pertains to the implementation of utilization of industry-friendly standards of evidence in regulatory decision making, which we have already seen with respect to the narrow, causation standard.

262. Meso strategy 17 pertains to securing and utilizing policymaking reforms which increase reliance on and provide a conduit for industry-favorable evidence, which we have already seen with respect to HESI-RISK21 and to the creation of favorable for a for discussion.

263. The final Macro strategy is to manufacture trust in industry and its scientific messaging.

264. Meso strategy 18 is to manufacture a picture of industry credibility, which is applicable in a general sense by combing the efforts catalogued to date, especially with respect to engaging academy communities and other researchers.

265. The final meso strategy pertains to the concealing of industry's involvement in scientific messaging, and influence on policy reforms that affect the use of science. This

²²⁹ Q: Okay. And then from HESI to RISK21, the arrows then go to EPA, PMRA, ANVISA, ADV --- APVMA, correct?

A: Yes

Q: And -- and this is part of the conceptual mod- -- model of Syngenta's license to operate --

“Q: —right?

A: This was something I put together to explain to senior leaders within Syngenta of how I operate. Deposition of Douglas Wolf, March 22, 2024, at 104.

²³⁰ Q: And you do know that Syngenta hired an outside company to do something called SEO, or search engine optimization, correct?

A: There's some references here to that. So I think I read that right. Yes, they may have. Yes.

Q: And the goal of SEO, or search engine optimization, was to push down the negative information and the criticism of paraquat and promote the messaging from the company concerning its view that paraquat does not have a link to Parkinson's disease, correct?

A: I am not an expert on SEO at all, but I believe the intention there was to make sure that our belief in the science was being communicated across these different online vehicles. Deposition of Sarah Hull, May 1, 2024, at 346.

concealment strategy is evidence in the opposition to Dr. Cory-Slechta and in hiding the source of the Miller letter critical of the Tanner study.

266. In sum, Syngenta's (and Chevron's) defense of paraquat is an almost verbatim, textbook application of how a company, particularly one in the chemical, health and environmental field, protects its product and its profits through a variety of tactics and strategies that hide the true risk of the product.

C. Syngenta provided post-service employment of former government officials, including officials who have influence over pesticides like paraquat.

267. Generally speaking, government employees are prohibited from negotiating for employment with any organization that is involved in a matter in which the employee is participating personally and substantially.²³¹ Often this requires recusal from continuing to work on the matter by the government employee.

268. The concern is that an employee with a potential financial interest may have their independent judgment comprised, or at least to have the appearance of having independent judgment comprised, if they are simultaneously seeking employment with a company subject to policymaking.²³²

269. While I do not opine on the legality or illegality of Syngenta's post-service employment practices under the Ethics in Government Act, the statute does provide some useful context to understanding the baseline standards of corporations' hiring of former governmental officials. Two provisions of the Ethics in Government Act provide guidance for understanding these baseline standards.

270. 18 U.S.C. Section 208(a) applies to conflicts of interest while employed with the United States Government:

Except as permitted by subsection (b) here- of, whoever, being an officer or employee of the executive branch of the United States Government, or of any independent agency of the United States, a Federal Reserve bank director, officer, or employee, or an officer or employee of the District of Columbia, including a special Government employee, participates personally and substantially as a Government officer or employee, through decision, approval, dis- approval, recommendation, the rendering of advice, investigation, or otherwise, in a judicial or other proceeding, application, request for a ruling or other determination, contract, claim, controversy, charge, accusation, arrest, or other particular matter in which, to his knowledge, he, his spouse, minor child, general partner, organization in which he is serving as officer, director, trustee, general partner or employee, or any person or organization with whom he is negotiating or has

²³¹ See, generally, The Ethics in Government Act, 18 U.S.C. Section 208(a).

²³² *Id.*

any arrangement concerning prospective employment, has a financial interest.²³³

271. More pertinent, while employees of the federal government seek to leave government service and return to the private sector – which of course is their right – they need to consult their agency’s ethics office or designated ethics official to obtain guidance as to potential conflicts of interest and, if possible, to obtain written ethics opinions.²³⁴

272. It is important to note that this provision calls out a “particular matter” unlike the post-employment prohibitions under Section 207, which will be examined shortly. The phrase “particular matter” (without the phrase “between specific parties” as appears in Section 207) does not require an adverse relationship. On October 4, 2006 Memorandum from Robert Cusick, The Director of the Office of Government Ethics states that “particular matter means any matter that involves ‘deliberation, decision, or action that is focused upon the interests of specific persons, or a discrete and identifiable class of persons....It is clear, then, that particular matter many include matters that do not involve parties and is not limited to adversarial proceedings or formal legal relationships.”²³⁵

273. 18 U.S.C Section 207 (the Ethics in Government Act, sometimes known as the post-employment statute) is a criminal statute. Pursuant to it, a former employee of the U.S. Government is permanently barred from communicating with or making an appearance before a federal agency on the behalf of another party with the intent of influencing on a matter in which the employee participated personally and substantially²³⁶

274. The Cusick Memorandum goes on to specify that “particular matter” can “include legislation and policymaking, as long as it is narrowly focused on a discrete and identifiable class. Examples in the OGE rules include a regulation applicable only to meat packing companies or a regulation prescribing safety standards for trucks on interstate highways.”²³⁷

275. Relevant here, HESI/RISK21 applies to a discrete area of industry with relatively few players, specifically those in related to health-related fields dealing with toxicity.²³⁸ That segment of industry seems no less discrete than the meat packing industry or to truck drivers on interstate highways; indeed, it seems even more limited, more discrete, and therefore much more susceptible to knowing that a particular policymaking effort- such as the change in the evaluation

²³³ *Id.*

²³⁴ *Id.*

²³⁵ Robert I. Cusick, Memorandum, October 4, 2006, *citing* Van Ee v EPA, 202 F.3d 296, 302 (D.C. Cir. 2000) (emphasis in original).

²³⁶ Section 207(a)(1).

²³⁷ Robert I. Cusick, Memorandum, October 4, 2006, at 8.

²³⁸ *See, generally* HESIGLOBAL at <https://hesiglobal.org>.

of risk in assessing whether a product should obtain registration would impact the exactly companies one would work for in the private sector.

276. Based on this sequence of events, it is clear from the facts of this case, that Dr. Wolf worked on HESI/RISK21 on behalf of the Environmental Protection Agency, that he expressed interest in and negotiated an agreement to work for Syngenta during that time, and continued to immediately thereafter work on HESI/RISK 21 after he began working at Syngenta because he remained a trustee of HESI/RISK 21's governing organization throughout the entire time.

277. Douglas Wolf served as a health scientist at the US EPA from September 1997 to November 2013 at the Research Triangle Park in North Carolina. He began work at Syngenta in November 2013 (though December 2018) also at Research Triangle Park as well as Greensboro, NC where he was Senior Technical Leader setting strategic goals for regional THS efforts.²³⁹

278. At the time he served the Government, EPA provided an information sheet to its employees on the ethical requirements entailed in leaving federal service:

In a nutshell, the restrictions on you before you leave Federal Service are more stringent than those after you leave Federal service. Your additional ethics obligations begin when you start looking for a job.

BASIC RULE: You can't participate personally and substantially in official matters that will have a direct and predictable effect on the financial interests of any person or entity with whom you are seeking employment

KEY POINT: We look at whether the matter will have an effect on the employer's financial interest, NOT whether what. You do will have an effect.

No participation means exactly what it says. You can't participate in the matter at all. Just because someone hides the name of the entity but still asks you to respond to the substantive issue is not good enough. You have to be sure that you do not participate AT ALL in any particular matter than involves the entity with which you are seeking employment. You have to stop participating fully and completely. You can't "write a few notes" on a matter and pass it along for someone else to deal with. No participation means that this matter is essentially dead to you.²⁴⁰

279. While at the EPA, Wolf directly worked on HESI/RISK21 at EPA:

Q: So – and you began working on the HESI RISK 21 initiative during. Your time at the EPA, correct?

²³⁹ Deposition of Douglas Wolf, March 22, 2024; Exhibit 1.

²⁴⁰ *Id.*; Exhibit 10.

A: Correct.²⁴¹

280. His work at the EPA regarding HESI/RISK 21 included working directly with senior leaders at the EPA to encourage them to adopt this new standard.

Q: Okay. And – and while – and while you were at the EPA, you were encouraging senior leaders at the EPA to adopt the HESI RISK21 initiative?

A: The – there were a number of opportunities to get input from different parts of the Agency while I was working in the early years of that project - - to get ideas of how this project can be beneficial and conform to the needs of the Agency. As a member of the Agency, I felt an obligation to make sure anything I work on fit with the needs of the Agency.²⁴²

281. Not only did he work on HESI/RISK 21, but he also served as a trustee of the public-private partnership – the Health/Environmental Sciences Institute under which the HESI/RISK21 effort operated: “I am on the board of trustees, yes.”²⁴³

282. There does, then, appear to be little doubt that, as a trustee of the board, he participated personally and substantially in the development of the HESI/RISK 21 tool. It remains to be determined whether he participated in a particular matter, but either way, his actions raise ethical issues.

283. Dr. Wolf claims that HESI/RISK 21 was merely a risk assessment tool, without financial implications

Q: And is it your position that RISK 21 does not have a predictable effect on the financial interests of Syngenta?

A: It’s a framework decision support and communication tool it’s not a financial tool.²⁴⁴

284. Yet, he acknowledges that its implementation would directly impact the likelihood of Syngenta obtaining more registrations to operate:

A: Focus on risk allows one to have a much more accurate and efficient evaluation program that addresses the – the risk management needs of a regulatory agency.

²⁴¹ *Id.* at 53-54.

²⁴² *Id.* at 58.

²⁴³ *Id.* at 32.

²⁴⁴ *Id.* at 69-70.

Q: And by doing that, that would enable Syngenta, to achieve our imperative of moving to 2 new Ais per year and successful registrations, right?

A: That would be the goal.²⁴⁵

285. Indeed, the HESI model appealed to Syngenta so that Syngenta colleagues, with whom Dr. Wolf worked, asked him about the possibilities of the replication of the model. For example, on December 4, 2014, Tim Pastoor wrote to Dr. Wolf, asking “Is there an educational effort that can be a collaboration amongst industry/academia/government (i.e. ELSI/HESI/SOT/IUTOX/Reg Agencies and etc.) that could affect a change? This is a fundamental FTO issue.”²⁴⁶

286. The impropriety of Dr. Wolf’s employment with Syngenta is further endorsed by the violated the post-employment statute (Section 207), which is referenced not as a basis for a legal opinion, but as a foundational guidepost for how corporations with regulatory obligations (such as defendants) should maintain its hiring practices.

287. Since its inception in 1978, Section 207 has applied to one who has participated personally and substantially as an officer or employee of the executive branch through decision, approval, disapproval, recommendation, the rendering of advice, investigation or otherwise while so employed.²⁴⁷

288. Post-employment regulations also provides that if a former employee does violate the statute, an agency head could also prohibit the former employee from engaging with the agency for up to five years.²⁴⁸

289. There is also a two-year ban – also with respect to communicating or appearing before a federal agency on behalf of another party, with the intent to influence on a particular matter involving specific parties that was within the official’s official responsibility during the final year of government service.²⁴⁹

290. The policies that underlie the post-employment restrictions are an effort to balance a perception of a former employee making unfair use of prior Government experience²⁵⁰ with the possibilities that even the Government benefits from expertise being transferred to the private sector

²⁴⁵ *Id.* at 88.

²⁴⁶ SYNG-PQ-15669702

²⁴⁷ 18 U.S.C. Section 207.

²⁴⁸ 5 C.F.R. Section 2637.212(a)(9)(i)

²⁴⁹ Section 207(a)(2).

²⁵⁰ See ABA Committee on Government Standards (Cynthia Farina, Reporter), *Keeping Faith: Government Ethics & Government Ethics Regulation*, 45 Administrative Law Review, 287, 329 (Summer 1993).

and fairness to the investment of “human capital” of an employee. The balance lies on whether the employee engages in a “particular matter. Determining exactly where that line exists is an ongoing public policy debate and gives rise to the issues in this case.

291. Section 207 does not necessarily apply to general rulemaking, even for a particular matter as long as there are no “specific parties” involved. This difference in language can be explained by the balancing legislators attempted to allow movement between government and private industry.²⁵¹

292. The examples demonstrating the meaning of this inapplicability, however, are of a much broader nature than what exists here. They include “an employee of the Food and Drug Administration (FDA) drafted a proposed rule requiring all manufacturers of a particular type of medical device to obtain pre-market approval for their products.”²⁵² The example notes that other manufacturers could also enter the market. This is distinguishable because (a) the example only cites an “employee” (rather than a trustee), who (b) “drafted a proposed rule” as opposed to a systematic and (c) for an open-ended industry as opposed to a discrete number of companies dealing with issues of toxicity.

293. A second example pertains to instances of regulations for the entire mining industry and a National Science Foundation educational program for all elementary school children. These are issues of general applicable far broader than a risk assessment tool for measuring toxicity.²⁵³ A policymaking rule applying to the entirety of elementary school education in the United States and to the entire mining industry of the United States is very far removed from the knowable, discrete number companies potentially affected by HESI/RISKS21.

294. By Dr. Wolf seeking employment with Syngenta while working on HESI/RISK21, he had clear knowledge of a possible effect on the specific company for which he aimed to work.

295. Dr. Wolf participated in a second prong of the post-employment test, that he participated substantially. While the evidence provided in the case does detail his exact involvement in HESI/RISK21 while at the EPA, he still meets the participation standard because he exercised final authority as trustee. While there may be times and places where a government employee participated substantially without having final authority, there are cases in which such authority becomes the key determinate.

296. Dr. Wolf also reports significant knowledge of HESI/RISK 21 in his deposition, reflecting his work at Syngenta, thus indicating that his participation in its development while employed at the EPA was not insignificant.

²⁵¹ 5 CFR § 2641.201(h)(2).

²⁵² *Id.* at § 2641.201(d)(3), Example 5.

²⁵³ *Id.* Examples 1 and 3.

297. Thus, given the knowledge he purports to have – which I take at face value – and his authority to make decisions as trustee of the Heath Science Foundation, he would be deemed to have participated substantially.

298. I know of no instance in which a person participates substantially in which they did not, then, also participate personally.

299. As already explained in the Science for Profit model, the revolving door that controls the determination of regulations under which the standards of safety pertain. And given the framing bias utilized by Syngenta – that safety is determined by the approval of the regulatory body – then the company has impacted the independent status of that body in favor of a risk model that benefits the company itself.

300. Indeed, the exact concerns raised by Dr. Wolf’s switch from the EPA to Syngenta align with the revolving door concerns.

301. Syngenta recognized the benefits of Dr. Wolf’s connections at the EPA in nominating him to become a Syngenta Fellow. Dr. Philip Botham, wrote that Dr. Wolf:

...immediately provided us with some key insights on the thinking of the US-EPA and how we could consider modifying our approach to data generation in toxicology for product approval and re-approval, and in particular how we needed to engage in active dialogue with agency scientists and decision-makers to facilitate the process of regulatory decision-making. Over the last 5 years we have gradually seen these insights being translated into real business benefit as, using the principals of the ACSA and Risk 21 projects, we have successfully gained agreement from the US-EPA for more targeted and in some cases accelerated programmes for product approvals and re-approvals, using a combination of tailored study design and study waivers along a reduced core set of required studies.²⁵⁴

302. Dr. Wolf’s knowledge of the key people at EPA who would be most likely to be receptive to proposals from Syngenta was important and he expressed frustration when some of those key people were not at meetings as he expected.²⁵⁵

303. Dr. Wolf himself claims credit for being able to leverage his contacts at the EPA on behalf of Syngenta. In his self-description for his nomination to become a Syngenta Fellow, he wrote:

Through my numerous connections with other leaders in risk evaluation and regulatory science and the respect they have for me, I have been able to

²⁵⁴ SYNG-PQ-11947858

²⁵⁵ Deposition of Douglas Wolf, March 22, 2024, at 286-289.

drive change and push for opportunities to change how chemicals are evaluated for human safety across multiple organizations. I have been applying innovative approaches to inform decision-making and finding opportunities to incorporate new ideas into new AI development projects as well as informing responses to regulatory agencies. These efforts are designed to increase the efficiency of decision-making and decrease the resources necessary to support scientifically defensible risk-based decisions.²⁵⁶

304. These connections included working with senior advisors at the EPA:

Using my network of scientific contacts in the Agency I was able to have a science based conversation with the senior science advisor to the US EPA Office of Pesticide Programs (Anna Lowit, PhD). Through my scientific credibility and reputation, I was able to broker an agreement with her to work on and present (sic) an alternative approach.... Working across Platforms in Product Safety I identified the key scientists who needed to be involved in the program with expertise in risk assessment and dosimetry modeling.²⁵⁷

305. His connections stretched to senior leaders of the EPA as well:

I have also personally met with senior leaders in the US EPA Office of Pesticide Programs and Office of Chemical Safety and Pollution Prevention (including the political appointees) and received good support for the concept [on risk assessment] I am now working with John, NARA pushing this concept out to the NA OECD representatives at the US EPA.²⁵⁸

306. Finally, these connections also provided the opportunity to reach beyond the United States, to impact other countries, such as in Brazil²⁵⁹ and Canada:

Because of my close connections to the regulatory agencies in the US and Canada I have been able to organize meetings between Syngenta Product Safety and Regulatory Affairs senior leaders and scientific staff and the senior leadership and scientific leadership of the Office of Pesticide Programs (OPP) at the US EPA and with the Pest Management Regulatory Agency of Health Canada to explain

²⁵⁶ SYNG-PQ-12530421

²⁵⁷ *Id.* at 3

²⁵⁸ *Id.* at 6.

²⁵⁹ *Id.* at 7.

how Syngenta is developing new approaches to evaluate the human health and environmental safety of our AIS product.²⁶⁰

307. The record appears to indicate that Syngenta's recruitment of Dr. Wolf was not an isolated incident and that, instead, in his deposition, he notes several other former EPA employees now working at Syngenta, including Christopher Schlosser, Evan Brown, Faith Lambert, Garrett Morandi, Sayed Islam, Blake Synder, Amber Goetz, June Yan, John Rooney, and Natalie Ryan.²⁶¹

308. Based on the evidence I have reviewed, Dr. Wolf's situation was not isolated. John Abbott testified that he was aware of EPA employees leaving the EPA to work in the pesticide industry, a phenomenon that has led to reporting that such a revolving door has corrupted the EPA.²⁶²

309. Another example was that of Thurston Morton, who inquired to John Abbott for a position at Syngenta not only while he was working for the EPA but when he was working on a particular assessment of paraquat, the 2019 registration review on the relation of paraquat to Parkinson's Disease.²⁶³ Whether Mr. Morton ended up being employed at Syngenta (it appears he was not) removes the possibility of a violation of post-employment prohibition, but it does not remove conflict of interest issues.

310. Similarly, Jessica Ryman-Rasmussen, who was also involved in the EPA's evaluation of the relationship between paraquat and Parkinson's Disease inquired about a position at Syngenta.²⁶⁴

311. Not only did Syngenta and Chevron make use of hiring former EPA employees to work for them, but former employees immediately did also work for the EPA with respect to paraquat matters pending before the EPA.

312. Maurice Green, for example, was a former Syngenta employee who established his own consulting firm and in 1980 obtained contracts from the EPA to conduct evaluations of paraquat as it was undergoing a Rebuttable Presumption Against Registration process. Less than thirty days after Green's reaching out to ICI to inform them of the capabilities of his firm, he wrote to Chevron that the changes of a challenge to paraquat's re-registration "seems to be declining: and, in fact, any challenges were dropped."²⁶⁵

²⁶⁰ *Id.*

²⁶¹ Deposition of Douglas Wolf, March 22, 2024, at 253-256.

²⁶² SYNG-PQ-PA-00033857; Sharon Lerner, *The Department of Yes, How Pesticide Companies Corrupted the EPA and Poisoned America*, The Intercept, June 2021.

²⁶³ SYNG-PQ-PA-00033880; SYNG-PQ-08370439

²⁶⁴ SYNG-PQ-ATR-04534099.

²⁶⁵ Deposition of Philp Botham, September 17, 2024 at 126-129.

313. Further Syngenta determined that it would not communicate with the EPA regarding the re-registration until it had heard back from Green's firm (Clement & Associates).²⁶⁶

314. Philip Botham acknowledged that Green's role "looks a little strange" but that, "at the time, this was recognized by the EPA to be appropriate."²⁶⁷ It is worth noting, however, that the Ethics in Government Act, was passed in 1978, which itself was a continuation of legislation addressing ethical concerns pertaining to revolving door activities like this.

315. Combined with the apparent, regular hiring of former EPA employees and the strategic leveraging of relationships openly claimed by such employees with the EPA, there is a clear, decades-long pattern of Syngenta infiltrating the EPA and influencing the decisions made by the agency that affected Syngenta. Given this history, the multiple claims of Syngenta employees in the materials available in this matter that the assurance of the safety of paraquat was based on its regulatory approval ethically rings hollow.

316. Given the above, Syngenta engaged in revolving door hiring practices through its employment of Dr. Wolf and other employees.

D. Defendants' actions related to Paraquat fail under contemporary business decision-making frameworks and they should have instead taken managerial actions to ensure its compliance with these established norms.

317. A classic starting point in a business ethics class is "The Ring of Gyges," a Socratic Dialogue found in Plato's *The Republic*. Socrates interlocutor, Glaucon, argues that people are ethical only for fear of getting caught. If they are able to avoid repercussions from their actions, they will do whatever they please. Socrates objects, claiming that humans also aspire to more noble ends and the contrast made: Are people ethical because they aspire to high standards or are they simply satisfied with making sure they avoid an enforceable, external punishment. From my review of the evidence, Syngenta and Chevron, follow Glaucon and not Socrates.²⁶⁸

318. In my review of the evidence, I have not found instances in which Syngenta scientists expressed concern for the health of the farmers who use paraquat. While there are statements made about the product being safe, those statements nearly always are in conjunction with whether the product has passed regulatory standards and, in particular, the standards of the United States Environmental Protection Agency.

²⁶⁶ *Id.* at 129.

²⁶⁷ *Id.* at 124.

²⁶⁸ See, Plato, *The Ring of Gyges*, cited in TIMOTHY FORT, THE VISION OF THE FIRM: ITS GOVERNANCE, OBLIGATIONS AND ASPIRATIONS (4th ed., 2023), at 41-42. The basic narrative is that the shepherd Gyges finds a magic ring that can make him invisible. That invisibility allows him to get away with whatever he wishes, including seducing the queen, killing the king, and taking over the kingdom. Glaucon then asks if a person with such power – and who cannot be caught – would act in any other way than to do whatever they wish, concluding that people are not ethical or just for any desire to good or for any benefit it may accrue, but simply are concerned about being caught.

319. As noted in several places in this report, multiple Syngenta employees have stated that the regulatory approval of paraquat, along with trust in their own scientists, are the entirety of their confidence that the product is safe.

320. This attitude is generally reflected through Chevron, too. In her deposition, Sara McMillen, a scientist speaking as a representative for Chevron would not go beyond the company's obligation to comply with EPA regulations in making paraquat safe:

Q: As Chevron speaking to them today, did Chevron believe it was its responsibility as the seller of paraquat to make sure that paraquat was safe for all users from the first day they sold it in 1965 until the last day the sold it in 1986? Yes or No?

A: So I – again, I looked at the communications of the scientists and the meetings that they had with regulators. They did all the studies that were required and went even above and beyond that to get all of the information and make sure the product could be used safely.

Q: Are you able to answer my question “yes” or “No”?

A: I don't think I can answer your question “Yes” or “No.” I don't know what else to say other than what I've already said.²⁶⁹

321. As with Syngenta, the goal of Chevron with respect to safety seems to have solely been rooted in compliance with regulatory agencies rather than an empathic concern for its end users.

322. The fact that regulatory agencies around the world have determined that paraquat should not be sold does not seem to have made any difference to the company's view of whether paraquat might injure farmers.

323. Syngenta has substituted its own judgment for what is submittable in contravention of EPA Guidance. It has also determined from its own, unsupported anecdotal awareness that it does not have to submit materials to the EPA. Both of these undermine the capacity of the EPA to regulate paraquat's safety all while Syngenta claims that the product is safe because of an EPA process which it systematically undermines.

324. As I have already explained, Syngenta exercises significant influence over the EPA in terms of the possibility of being “the next job” for overworked EPA employees and in terms of the selectivity and/or refusal to submit results of negative studies to the EPA. Thus, Syngenta is basing its commitment to the well-being of farmers on not being caught by a regulatory agency

²⁶⁹ Deposition of Sara McMillan, April 27, 2022, at 270-271.

over which it has significant influence. For those regulatory authorities it does not have the same structure, the product has been banned, decisions that seem not only to not concern Syngenta, but which makes them quite angry.

325. On this basis, and on the basis of the material previously set forth, the following paragraphs apply the leading theories of contemporary business ethics to assess and contextualize Syngenta and Chevron's business, scientific, and regulatory decisions regarding paraquat.

Stakeholder Theory Generally

326. As noted, the idea that businesses have social, ethical responsibilities in its business decisions is ancient generally and within the United States. The originator/reformulator of ethical theory in business today is R. Edward Freeman in his book *Strategic Management: A Stakeholder Approach*.²⁷⁰ Freeman derived his framework from Immanuel Kant, arguably the most influential philosopher in the western world in the past two hundred years, whose categorical imperative stated that for any law or principle to be moral, it should be able to be applied universally. The corollary is that all human beings would want to be treated with dignity and as a means not as an end to another objective. Thus, corporations should take into account "stakeholders" (defined as those who are affected by a corporate action) because each of us would want to be treated as an end, rather than as a "labor input," an interchangeable part" or a sales figure. Stakeholders, according to Freeman, could be employees, customers, suppliers, the community, the environment and others.²⁷¹

327. A resulting question is how does one prioritize among the various stakeholders? In that regard, William Frederick, with a degree of both seriousness and whimsy, characterized the efforts of business ethics theorists in the following formula: $EBB = R_K + J_R + U$, where EBB stands for Ethical Business Behavior being a product of the application of Kantian Rights (R_K) plus Rawlsian Justice (J_R) plus Utilitarianism (U).²⁷² My amendment to Fredericks "Philosophers Formula) is to add a component of complying with the law, including that of shareholder theory along with a factor of motivation, which encompasses virtue theory. Thus, the full formula, which fairly represents the normative, decision-making model of field of business ethics becomes $EBB = (L_{C/J} + R_K + J_R + U)(M)$ where a company complies with just laws ($L_{C/J}$) including managers' duty to carry out the lawful directives of their shareholders and motivation/virtue (M) of a desire to enact certain traits and values, many of which have been extensively assessed in this opinion already.

Stakeholder Theory: The Rights Model

²⁷⁰ Freeman RE, *Strategic Management: A Stakeholder Approach*, Cambridge University Press, 1984.

²⁷¹ TIMOTHY L. FORT, THE VISION OF THE FIRM: ITS GOVERNANCE, OBLIGATIONS AND ASPIRATIONS (4th ed., 2023), at 123-124 (describing Freeman's stakeholder theory)

²⁷² *Id.* at 124, 125

328. The rights model is an effort to define what interests of stakeholders are most important in a given situation. The originator and key spokesperson for this framework is Patricia Werhane, primarily articulated in her book, *Persons, Rights, and Corporations*.²⁷³

329. Werhane differentiated between primary rights (also known as basic rights) and secondary rights (also known as non-basic rights). Basic rights, she argued are those things without which life would be intolerable. Those rights are life itself, food, water, shelter, freedom from torture, and basic health. Secondary rights also have status and should be protected, but life would not be intolerable without them. Central among secondary rights are rights to property and, derived from the right of private property, the right to income. While important – and thus, there should be enforced laws against theft, trespass, etc. – history shows that people have lived tolerably without the right to private property.²⁷⁴

330. Werhane provides a decision-making model based on the differentiation of rights. If there is a contest between primary rights and secondary rights, then primary rights win. Thus, if a company makes money but in so doing jeopardizes the life or health of a stakeholder, the stakeholder's rights win over that of making money. If there is a contest between rights of equal stature, then one attempts to compromise to respect both rights if possible; this would include contests between two primary rights or two secondary rights (an example of which would be a labor negotiation).²⁷⁵

331. Werhane recognizes efforts of companies to claim that their making of money could convert to a basic right in that, if an employee did not have a job, their capacity to obtain food, shelter, and potentially other basic rights might be in jeopardy. In response, Werhane notes that such an eventuality is conceivable, but before deferring to a company's assessment that the work of their company is so vital to the lives and well-being of employee/stakeholders, she would demand documentary evidence that such is the case.²⁷⁶

332. In the case of Syngenta and Chevron's manufacture and sale of paraquat, Werhane's approach would be straight-forward: The right of farmers and others to life and to basic health would be more important than Defendants' right to make money. One could imagine, however, two arguments against this decision.

333. The first is whether the no-tillage benefits of paraquat entail an amplification of paraquat sales to that of a primary right since no-tillage has environmental benefits. While there is some subjectivity in accounting for this argument, I do not believe that it would justify paraquat's sale under Werhane's theory. That is because the threat to health is much more direct while paraquat has not been demonstrated, to my knowledge, as being the sole alternative to soil erosion.

²⁷³ PATRICIA WERHANE, *PERSONS, RIGHTS AND CORPORATIONS* (1985).

²⁷⁴ TIMOTHY L. FORT, *THE VISION OF THE FIRM: ITS GOVERNANCE OBLIGATIONS AND ASPIRATIONS*, (4th ed., 2023), at 125-126.

²⁷⁵ *Id.* at 126.

²⁷⁶ *Id.* at 126.

334. The second refers to the causation question. Syngenta claims that only its version of proven causation (between paraquat and Parkinson’s disease) matters and, thus, without such proof, there is not a direct impact on primary rights such as life and health. I do not believe this would be persuasive under Werhane’s theory because it is difficult to ever completely prove a scientific fact, yet there is substantial evidence – both from non-Syngenta scientists and from the fact that paraquat has been banned or its use has been severely restricted in approximately 150 countries — that there is a direct impact on life and health from paraquat exposure.

335. Thus, my opinion is that under the Rights Theory of Business Ethics, as articulated by Patricia Werhane, Syngenta and Chevron have ethically failed in its responsibilities to its stakeholders, namely the end-users of paraquat.

Stakeholder Theory: The Justice Model

336. The Justice Theory of Business Ethics derives primarily from the work of John Rawls, arguably the most, or at least one of the most, influential philosophers in the United States in the last one hundred years. Rawls tried to imagine a society that would be considered to be fair. He used a thought experiment in which he imaged a group of people in the “original position,” that is, “behind a veil of ignorance.’ By this he means that a group of people would not know who they would be when they were born. They would not know their race, gender, height, beauty, intelligence or any other defining feature of their identity.²⁷⁷

337. Given this position, and using psychological insights of risk assessment, Rawls asked what people would think would be fair rules for a society, since they may be in a struggling position or in an advantageous position. One of these key conclusions is that the vulnerable should not be made more vulnerable. That conclusion does not prevent those in advantageous positions to continue to be better off, but that if one were vulnerable, they should not be made more so.²⁷⁸

338. Applied to corporations, one would thus identify who the most vulnerable stakeholders are in a given situation and then make sure that, whatever happens, they would not be made worse off. In this formulation, the most vulnerable stakeholders in this case clearly would have to be farmers who use paraquat. They should not be made more vulnerable. Subjecting them to the risks of disease from exposure to paraquat certainly increases their risk of being made worse off. Moreover, the same potential arguments against this application of Justice theory would be the same as they wear under Rights theory.

339. Two Wharton professors – Thomas Donaldson and Thomas Dunfee – refined Rawls argument in their Integrative Social Contracts Theory. Donaldson and Dunfee were willing to provide “moral free space” for cultures to define what was appropriate in their countries. However, even within moral free space, individual stakeholders needed to demonstrate that they consented to

²⁷⁷ *Id.* at 128

²⁷⁸ *Id.*

the norms and had the capacity to exit. In addition, even if they consented, certain actions could violate cross-cultural “hypernorms” and thus invalidate the consent.²⁷⁹

340. The notion and definition of hypernorms is contentious, but one does not have to reach the contentious stage to apply their framework because in this case, there is no operable consent and the country in question is not a developing country, for which Donaldson and Dunfee accorded the notion of moral free space, but the United States of America.

341. More specifically, one cannot consent if one does not have information upon which one can base consent. What is abundantly clear in the evidence available in this case is that information was withheld from regulators and from users of paraquat. Farmers simply had no information upon which they could provide consent.

342. Further, the United States is not a country in which lesser standards of safety could be argued are necessary in order to advance the country’s economy from subsistence to something more robust. Indeed, such countries have banned paraquat!

343. Thus, under the Justice Theory of Business Ethics generally and the more particular Integrative Social Contracts Model of Donaldson and Dunfee, Syngenta and Chevron have failed in its ethical responsibilities.

Stakeholder Theory: The Utilitarian Model

344. The Utilitarian Framework for Business Ethics looks at what will create the greatest good for the greatest number of people. Drawn from English philosophers such as Jeremy Bentham and John Stuart Mill, this approach acknowledges that human beings have different preferences, or utilities, and that we should look to see what ultimately creates the greatest amount of happiness for the universe of people affected. This approach is also known as consequentialism.²⁸⁰

345. A core challenge of utilitarianism is to calculate the value of a given utility. Is one farmer’s additional ten bushels of corn per acre equal to another’s suffering from Parkinson’s Disease? Continuing, an argument against utilitarianism is that how one counts those utilities often has a great deal to do with who has the power to make decisions, indicating that those in power value the utilities that benefit them as opposed to the utilities that make a difference to others. Thus, utilitarianism does have real advantages if one can find a common denominator of value – say votes in a democratic election or comparisons of profit for different products in a company (adjusted for externalities of harm) – but significant harms often fall on a minority (such as a disfavored religious group in a polity), so that the utilization of utilitarianism typically is accompanied by some component of rights or justice.²⁸¹

²⁷⁹ *Id.* at 128-130.

²⁸⁰ *Id.* at 130-131.

²⁸¹ *Id.*

346. In addition, the Utilitarian model depends on accurate information so that individuals can “cast a vote” or to understand and consent to risk so that they realize what of their own utilities are at stake. Yet, as already noted, in this case, Syngenta has not released the information necessary for such evaluations to even happen.

347. Thus, my opinion is that Syngenta and Chevron have ethically failed under the Utilitarian Model of Business Ethics, though I also acknowledge that this opinion is more subject to subjective critique than is the case with Rights and Justice.

Virtue Theory

348. The Virtue Theory of Business Ethics originates from scholars such as Robert Solomon²⁸² and Edwin Hartman.²⁸³ Rather than deontological models arising from Kant and, to a lesser extent Rawls, and their business ethics interpreters and rather than the consequentialist model, the virtue theorist trace their approach to Aristotle to ask what values or virtues are good, what are excellence, and what are aspirational so that in a community, one would encourage them to be practiced and that the practice of them would define a good person in such a community.²⁸⁴

349. As I have already documented relevant communities define those virtues, such as in the Society of Toxicology, the National Science Foundation as well as in business ethics texts. From business leaders, and from my students. Indeed, Part A of this opinion is an application of virtue theory, particularly relevant to the intersection of business and science.

350. As analyzed under Part A, as well as Part B, my opinion is that Syngenta has ethically failed under the Virtue Model of Business Ethics.

Syngenta and Chevron's Alternative Actions Under a Model of Trust

351. Based on foregoing opinion, Syngenta and Chevron do not engender trust. The methods by which they manipulate regulatory bodies and public information implicate their legal responsibilities, the failure to uphold the standards of both scientific ethics and of business ethics, principles that they themselves claim to value and to practice undermines their reputation, and the failure to evince concern over the health and well-being of their end constituents indicate a lack of empathy and concern for those farmers and suggest a lack of motivation to provide a safe product, preferring instead to merely rely on a regulatory standard that the companies themselves manipulate.

352. As noted in Footnote #1 of this opinion, for thirty years, I have used a formula to determine ethical business behavior (EBB) retrospectively (i.e., did a company conduct itself ethically) and prospectively (how can it build an ethical culture going forward) through a model I

²⁸² ROBERT C. SOLOMON, ETHICS AND EXCELLENCE: COOPERATION AND INTEGRITY IN BUSINESS (1993).

²⁸³ EDWIN HARTMAN, ORGANIZATIONAL ETHICS AND THE GOOD LIFE (1996).

²⁸⁴ TIMOTHY L. FORT, THE VISION OF THE FIRM: ITS GOVERNANCE, OBLIGATIONS AND ASPIRATIONS (4th ed., 2023), at 141-150.

call Total Integrity Management (TIM). Neither EBB nor TIM offer anything necessarily new to the understanding of business ethics; instead, they describe the state of analysis in both academic research and in actual corporate conduct and then places a name on it. Thus, while a company may not practice, EBB or TIM in name, the components remain relevant regardless of the nomenclature provided. It is also set out in all four editions of my textbook, *The Vision of The Firm*, published by WestAcademic, and has been published in peer-review publications (for example, in my book *Business, Integrity, and Peace*) published via a peer review process by Cambridge University Press. The late William Frederick, one of the founders of the modern field of business ethics and a professor at the Katz School of Business at the University of Pittsburgh, coined the middle part of that formula.

353. $EBB = (L_{C/J} + (R_K + J_R + U)) M^3$ where EBB stands for Ethical Business Behavior: $L_{C/J}$ Stands for Complying with the Law, Provided the Law is Just; $R_K + J_R + U$ Stands for the Characterization of the field of Business Ethics in that it applies Rights, particularly as derived from the philosophy of Immanuel Kant R_K along with notions of Justice, particularly as derived from the philosophy of John Rawls J_R and considerations of Utilitarianism U ; and M^3 stands for a factor of Motivation with the understanding that if one does not have motivation to be ethical – to care – then compliance and rhetoric will not lead to ethical actions.

354. And where $TIM = HT + RT + GT$ where TIM stands for Total Integrity Management: HT: Stands for Hard Trust or building corporate trustworthiness by complying with relevant laws that can punish a company if violated; RT: Stands for Real Trust where corporate reputation has an economic payoff by adhering to norms that constituents of the company view as important, such as truth-telling, promise-keeping, and production of high-quality goods and services; GT: Stands for Good Trust, where corporations embrace a sense of caring about stakeholders and virtues because they have an independent good to them, regardless of their benefits for compliance and for economic success.

355. Under this model, Hard Trust would require Syngenta and Chevron to comply with the relevant legal standards. I will leave it to experts more familiar with the regulations of the Environmental Protection Agency, but the evidence in this case clearly raise issues as to whether studies were accurately and timely reported and whether the provisions of Ethics in Government Act with respect to conflicts of interest issues when recruiting and hiring EPA employees and also with respect to post-employment prohibitions. At a minimum, under this model, Syngenta and Chevron should respect and not flout the law.²⁸⁵

356. Under this model, ethical principles of both science and business ethics are relevant in order to create Real Trust in the science undertaken by anyone, including companies. Principles of honesty, transparency, independence, and avoidance of bias, among others, were clearly stated as ethical principles of science, ethical principles of business, ethical principles of toxicologists, ethical principles of Syngenta scientists, and ethical principles of business executives, academics, and students. These principles are neither controversial nor are they so subjective as to be impossible to understand. As the National Science Foundation report indicates, these are not only

²⁸⁵ See, e.g., TIMOTHY L. FORT, ETHICS AND GOVERNANCE: BUSINESS AS MEDIATING INSTITUTION (2001) AND TIMOTHY L. FORT, BUSINESS, INTEGRITY, AND PEACE: BEYOND GEOPOLITICAL AND DISCIPLINARY BOUNDARIES (2007).

principles of good science but of everyday life and they build trust. The remedy for Syngenta and Chevron here is simply to follow what each of these sources – including themselves – believe in.²⁸⁶

357. Under this model, Good Trust is about a desire to do good, to have the motivation to achieve something more than compliance or making money. Yet, there is almost no evidence of Syngenta and, to a lesser extent, Chevron scientists seeking to protect farmers from harm. This category of analysis is much more subjective than the other categories because it requires an interpersonal assessment of how to generate that motivation. It could be through individuals in the companies relating their stories of good conduct, it could be through the company articulating a narrative of how it achieves good, and it could be by organizing the corporate structure to place people in sizes of work groups that match their neurobiological capabilities. If preventing the possibility of Parkinson's Disease is a good, then there is no evidence that Syngenta undertook any of these or other managerial practices.²⁸⁷

358. As noted earlier, in 2017 Countess Alexandra and I published *The Sincerity Edge*. In that book, we interviewed executives with a reputation for creating and maintaining ethical corporate businesses. As part of our research, we asked those executives for examples of exemplary behavior and that of problematic behavior.

359. The top answer for exemplary behavior was the 1982 response of Johnson & Johnson to tainted Tylenol capsules that killed several people in the Chicago area. Within the week, Johnson & Johnson pulled all the Extra Strength Tylenol capsules off the shelves nationwide even though there was no proof that the company had contributed any action that led to the tainted pills. Indeed, the case has not been solved more than forty years later, but, as our executives said, Johnson & Johnson did not wait for causation; their commitment was to the safety of the people who used their products. CEO James Burke stated that they did so because they could otherwise not live up to their Corporate Credo, which committed the company to create safe products for the individuals who use them.²⁸⁸

360. Syngenta's and Chevron's insistence on utilizing only the standard of causation is a far cry from the actions leading corporate executives referenced with respect to Johnson & Johnson.

361. Interestingly, LaRue Hosmer analyzed the differing corporate reactions of Johnson & Johnson with respect to Tylenol and that of Exxon with respect to the wreck of the Exxon Valdez in 1989 – two corporations of similar size and scope of Syngenta and Chevron. Hosmer argued that the corporate cultures were vastly different. Exxon's, he argued, was very legalistic defining duties in terms of compliance with legal and regulatory standards whereas Johnson & Johnson's was aspirational. The reaction from the first kind of organization is to determine one's role and, indeed, the evidence throughout this case is a testament to multiple individuals in Syngenta and

²⁸⁶ *Id.*

²⁸⁷ *Id.*

²⁸⁸ ALEXANDRA CRISTINA & TIMOTHY L. FORT, *THE SINCERITY EDGE: HOW ETHICAL LEADERS BUILD DYNAMIC BUSINESSES* 60-64 (2017).

Chevron fulfilling their role and asking no further questions about safety. The reaction of the second kind of organization was how do we keep our stakeholders safe.²⁸⁹

362. Other executive-nominated examples of companies undertaking exemplary actions included Mattel's 2007 recall (for lead paint), Maersk Shipping voluntarily undertaking improvements in its sustainability practices, and Arla Dairy's response to tainted baby milk powder.²⁹⁰ A common feature of each of these was management's pro-active response to a possible problem without waiting for causative proof as to any wrongdoing.

363. The executives also identified problematic corporate behavior, including that of Enron, Martha Stewart in her insider trading/obstruction of justice prosecution, Lehman Brothers and the start of the mortgage meltdown, and the Ford/Firestone controversy concerning the quality of data about tire failure. In each of these scandals, there was a lack of transparency and or honesty about the data or actions involved, questions also directly raised in this case.²⁹¹

364. Countess Alexandra and I also asked the executives for the factors that make for an ethical organization. The top four were Tone at the Top, Listening to All Stakeholders, a Long-Term Focus, and Clear, well-understood policies and goals. Based on the evidence I have reviewed, the Tone of the Top was, if anything counterproductive to safety as were, to the extent available to ascertain, the companies' policies and goals. Given the lack of interest in the health and well-being of farmers, there does not seem to have been effective listening to all stakeholders and, as mentioned in the material on shareholder theory, the company's focus has been arguably short-term rather than long-term.²⁹²

365. From the evidence I have examined in this case, Syngenta and Chevron followed the model deemed problematic by executives with a reputation for creating and maintaining and ethical organization instead of the model those executives called out as being exemplary ethical conduct and sound business decision-making. Or to put it otherwise, Syngenta and Chevron acted more like Glaucon than Socrates.

IX. SUPPLEMENTING THESE OPINIONS

²⁸⁹ See, LARUE TONE HOSMER, MORAL LEADERSHIP IN BUSINESS (1993) In his book, Hosmer provides an exercise for students to compare the Johnson & Johnson Corporate Credo with Exxon's Summary Code of Conduct, an exercise which expanded on later lectures and writings.

²⁹⁰ ALEXANDRA CRISTINA & TIMOTHY L. FORT, THE SINCERITY EDGE: HOW ETHICAL LEADERS BUILD DYNAMIC BUSINESSES 64-72 (2017). Other companies cited included Starbucks, Costco, and the City of Copenhagen. We also reserved judgment on another nominee: Blue Bell Ice Cream.

²⁹¹ ALEXANDRA CRISTINA & TIMOTHY L. FORT, THE SINCERITY EDGE: HOW ETHICAL LEADERS BUILD DYNAMIC BUSINESSES 47-55(2017). *Id.* The executives also called out the BP oil spill in the Gulf of Mexico and the GM/Toyota brake failure.

²⁹² *Id.*

366. I reserve the right to supplement, amend, or edit my report and opinions based on

further information provided prior to or at trial.

X. DECLARATION

367. I declare under penalty of perjury that the foregoing statements are true and correct to the best of my knowledge, and if called as a witness would testify competently thereto.

Dated: October 04, 2024.

By:



Timothy L. Fort

Exhibit A – CV

Exhibit B – MCL

Exhibit C

The Science for Profit Model: Representative (Non-Exhaustive) Examples

Macro Strategies	Meso Strategies	Defendants' Actions
A. Influence the Conduct & Publication of Science to Skew Evidence Basis in Industry's Favor	1. Undertake Safe Research	- Generally: Created an "influence strategy"²⁹³ - Generally: Establishment of Influence Strategy²⁹⁴ - Chevron avoidance of blood-brain research²⁹⁵ - Widnes study²⁹⁶
	2. Covertly Undertake or Prevent Risky Industry Research.	- Not proceeding on addressing "three big questions"²⁹⁷ - Not proceeding on follow up of monkey brain study²⁹⁸ - Avoided measuring paraquat levels in the brain²⁹⁹
	3. Control Design & Analysis of Industry-Funded Science to Ensure Favorable Results	- Last minute submission of objection in Mexican appeal³⁰⁰ - Partnership with HESI³⁰¹
	4. Shape & Undermine External Research	- Raised \$4,000 for Gary Miller editorial³⁰² - Additional consultants hired per other categories³⁰³
	5. Ensure Favorable Research is Heavily	Recruited four different labs to

²⁹³ SYNG-PQ-02140625

²⁹⁴ SYNG-PQ-31432563, SYNG-PQ-ATR-08318378

²⁹⁵ 3/4//2020 Patterson at 195 – 196, 205 – 206; 6/23/2020 Patterson at 559.

²⁹⁶ 2/28/2020 Campbell at 86; 3/1/202 Campbell at 287, 301, 302, 304.

²⁹⁷ 2/15/2022 Botham at 341 – 342.

²⁹⁸ 2/16/2022 Botham at 371.

²⁹⁹ SYNG-PQ-21481793.

³⁰⁰ SYNG-PQ-35998469.

³⁰¹ 3/22/2024 Wolf at 32.

³⁰² 10/18/2022 Travis at 125 – 126.

³⁰³ See, *supra* at ¶¶ 161 and 242 for representative, but not exhaustive examples.

Macro Strategies	Meso Strategies	Defendants' Actions
	Represented in the Evidence Base	- conduct studies on mouse model.³⁰⁴ 2. Payment to Mandel and Exponent³⁰⁵ 3. Hiring of Colin Berry³⁰⁶
	6. Control Reporting and Suppress Publication of Unfavorable Science	1. Marks³⁰⁷ 2. Widnes Study³⁰⁸ 3. Exponent re-analysis of Tanner³⁰⁹ 4. No reporting of DiMonte evidence³¹⁰ 5. Did not report monkey brain story to regulatory agency³¹¹ 6. Did Not Report the Tanner Re-analysis³¹² 7. With respect to Dr. Marks study³¹³ 8. Further with Marks study³¹⁴ 9. Chevron's non-reporting of its assessment that studies were poorly done.³¹⁵
B. Influence the Interpretation of Science to Undermine Unfavorable Science & Create a Distorted	7. Develop & Promote Criteria & Concepts for Critiquing Science Which Can Be Used to Further Industry Arguments	1. On Causation vs Association³¹⁶ 2. Additional material on Causation vs Association³¹⁷ 3. Involvement in HESI-RISK 21 initiative to

³⁰⁴ 10/11/2022 Smith at 102.

³⁰⁵ 1/18/2023 Breckenridge Dep. at 202 – 203.

³⁰⁶ *Id.* at 265.

³⁰⁷ 2/26/2020 Botham Dep. at 356-357.

³⁰⁸ *See, supra* at ¶ 243.

³⁰⁹ 2/26/2020 Botham Dep. at 363.

³¹⁰ 2/16/2022 Botham Dep. at 384.

³¹¹ *Id.* at 374 – 375.

³¹² *Id.* at 407.

³¹³ 2/26/2020 Botham Dep. at 356 – 357.

³¹⁴ *Id.* at 363.

³¹⁵ 11/16/2020 Patterson Dep. at 101.

³¹⁶ 10/12/2022 Smith Dep. at 77.

³¹⁷ *Id.* at 89

Macro Strategies	Meso Strategies	Defendants' Actions
Picture of the Evidence Base		change risk assessment ³¹⁸
	8. Obtain & Re-analyze Raw Data From Unfavorable Science	1. Tanner re-analysis ³¹⁹
	9. Attack & Misrepresent Science	1. With respect to reviewers' assessment of Neurotox journal submission ³²⁰ 2. Cory-Slechta ³²¹ ; Tanner ³²²
	10. Monitor & Attack Scientists & Organizations	1. Monitored the work of Cory-Slechta ³²³ 2. Opposed appointment of Cory-Slechta to Science Advisory Panel ³²⁴ 3. Also opposed her nomination to advisory panel of the National Science Foundation. ³²⁵ 4. Tanner ³²⁶ ; 5. DiMonte ³²⁷
C. Influence the Reach of Science to Create an "Echo Chamber" for Industry's Scientific Messaging	11. Use Legal Means to Protect Industry Evidence From Being Discovered or Accessed	1. Email from Sullivan to halt chain to protect attorney-client privilege ³²⁸ 2. Email from Sullivan to Brady & Nadel ³²⁹

³¹⁸ 3/22/2024 Wolf at 88

³¹⁹ 2/16/2022 Botham at 403 – 405.

³²⁰ *Id.* at 533

³²¹ *Id.* at 465, 471; 6/17/2020 Botham at 696.

³²² 10/18/2022 Travis at 125 – 126.

³²³ 2/16/2022 Botham at 465

³²⁴ SYNG-PQ-05705351.

³²⁵ 6/17/2020 Botham at 696.

³²⁶ 10/18/2022 Travis at 125 – 126.

³²⁷ *See*, Paragraph 255.

³²⁸ SYNG-PQ-31434771

³²⁹ SYNG-PQ-31449369.

Macro Strategies	Meso Strategies	Defendants' Actions
	12. Contract Messengers to Create Scientific Echo Chamber	1. Paid a number of scientists to write articles ³³⁰
	13. Fund, Produce & Disseminate Materials Which Package Science in Industry-Favorable Ways	1. Wolfe recruited student ³³¹ 2. Contractors as earlier noted (Exponent, Berry, Etc.) ³³²
	14. Use Education, Events, & Meetings to Disseminate Industry-Favorable Scientific Messages to Key Stakeholders	1. Conveying to public safety by an image where applicator is not wearing a respirator. ³³³ 2. Creation of HESI PPP ³³⁴
	15. Maximize Press Coverage of Industry Favorable Scientific Messages	1. NY Times ³³⁵ 2. Partnership with Economist ³³⁶ 3. Social media keyword approach ³³⁷
D. Create Industry-Friendly Policymaking Environments Which Shape the use of Science in Policy Decision-Making in Industry's Favor	16. Implement & Utilize Industry-Friendly Standards of Evidence in Regulatory Decision-Making	1. Abby Li ³³⁸ 2. HESI ³³⁹ 3. Insistence Upon Causation standard ³⁴⁰
	17. Secure & Utilize Policymaking Reforms Which Increase Reliance on & Provide a Conduit	1. HESI RISK 21 ³⁴¹

³³⁰ 2/16/2022 Botham at 417

³³¹ *Id.*

³³² *Id.*

³³³ 6/25/2020 Patterson at 70; CUSA-00124055

³³⁴ SYNG-PQ-12572218

³³⁵ 5/1/2024 Hull at 371, 410 – 416.

³³⁶ *Id.* at 129, 133.

³³⁷ *Id.* at 346

³³⁸ 2/16/2022 Botham at 496, 501.

³³⁹ *See supra* at ¶¶ 10, 13-17, 19, 161, and 242.

³⁴⁰ *See supra* at ¶¶ 68,93,93,134,140,204,246-248,250, and 251.

³⁴¹ *See supra* at ¶¶ 10, 13-17, 19, 161, and 242.

Macro Strategies	Meso Strategies	Defendants' Actions
	For Industry-Favorable Evidence	
E. Manufacture Trust in Industry & Its Scientific Messaging	18. Manufacture a Picture of Industry Credibility	1. Applicable as the sum of the preceding meso-strategies