Toxic Torts

The U.S. tort, or personal injury law, cloaked behind increased judicial review of science, is changing before our eyes, except we cannot see it. U.S. Supreme Court decisions beginning with *Daubert v. Merrell Dow Pharmaceutical* altered how courts review scientific testimony and its foundation in the law. The complexity of both science and the law mask the overall social consequences of these decisions. Yet they are too important to remain hidden. Mistaken reviews of scientific evidence can decrease citizen access to the law, increase incentives for firms not to test their products, lower deterrence for wrongful conduct and harmful products, and decrease the possibility of justice for citizens injured by toxic substances. Even if courts review evidence well, greater judicial scrutiny increases litigation costs and attorney screening of clients and decreases citizens' access to the law. This book introduces these issues, reveals the relationships that can deny citizens just restitution for harms suffered, and shows how justice can be enhanced in toxic tort cases.

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Science, Law, and the Possibility of Justice

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For Crystal, Chris, and Taylor

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Preface

It is tempting to say that our tort, or personal injury, law is changing before our eyes, except we cannot see it. These modifications are occurring because of Supreme Court decisions that increased the screening of expert (largely scientific) testimony in the law, but it is difficult for all but the best informed to comprehend them. Some who understand them welcome them, some do not, and some will have more mixed assessments of them. However, most citizens cannot even have an opinion on the relevant issues because they are unaware of them and because the topics themselves are not easily accessible. The barriers to understanding this important legal institution are the result of subtleties most of us never think about – issues about scientific evidence and reasoning, and legal procedures that are complex and inaccessible to most of us.

The actual and potential transformations of this part of our legal system are too important, however, to remain hidden and too important for an informed citizenry to be left in the dark about them. Citizens risk having their realistic access to the tort law and the possibility of justice within it reduced and they will not know it. Judges and lawyers are at risk of being manipulated by slogans about "sound science," not realizing there are more scientifically accurate and legitimate ways to think about science, law, and the interaction between the two. There is even a risk to the legitimacy of the law itself, if mistaken scientific arguments are used to frustrate its aims. The issues posed by the potential changes in our legal system are not easy, however. In order to "see" and come to have a better appreciation of them, we must understand more about some of the procedures in the law that occur before trial, not something most of us are aware of. We also must understand some basics of the sciences that assist in revealing human harm from exposure to toxic substances. In addition, there are subtleties about these sciences and different evidentiary patterns of harm that must be appreciated. Too simplistic a view of the subjects will inadvertently skew the science, the law, and our protections under it.

This book seeks to make some progress on these issues. I have sought to introduce those not familiar with legal procedures to some of the basics of

the law to locate the legal issues. I also have sought to introduce those not familiar with some of the basics in the relevant sciences to such information. However, in order to understand subtler points about law and science and their joint consequences for the law, the discussion must go further. Consequently, it is necessary to discuss details of legal procedure as well as legal decisions that have brought the changes or that have implemented them. We should understand what judges have said about science in adjudicating alleged personal injuries from exposure to toxic substances. However, to assess the impact of their decisions and the reasons they have given for reviewing the science as they did, we also need to appreciate some of the finer points about different kinds of scientific evidence, how it can be integrated to show harm, and how scientists utilize studies in order to arrive at judgments that a substance has contributed to harm. In short, one cannot shrink from grappling with some of the details of scientific evidence and reasoning. I have tried to address these issues, but in a way that provides the reader with an understanding of how the interaction between science and the tort law can profoundly affect our realistic access to the legal system, our possibilities of justice within it, and deterrence of wrongful behavior or harmful products.

In writing this book, I have learned and had various kinds of assistance from many. I will no doubt forget some whose comments, insights, contributions, or conversations have been of value, but I hope not. If I have, I hope they will forgive my faulty memory. Three people ably assisted research on and the preparation of the final manuscript. David Strauss provided excellent research assistance, including research on case reports (Chapter 4), many useful conversations, and fine editorial skills in earlier stages of the project. Richard Doan, Shannon Polchow, and Laura Lawrie gave excellent, detailed help in preparing the manuscript for publication. In the intellectual gestation that is needed for a project such as this, I received invitations to contribute to a variety of conferences, journals, or volumes that facilitated the development of some of the ideas that found their way into the book. Invitations from John Conley, Susan Haack, Sharon Lloyd, Michael Moore, Lee Tilson, David Shier, David Michaels, Celeste Monforton, Tom McGarity, Raphael Metzger, Wendy Wagner, and Rena Steinzor were particularly important. They provided quite helpful comments on drafts of earlier papers or on the book itself over the years. I also learned from Margaret Berger, Michael Green, Peter Graham, Paul Hoffman, Joe Sanders, Katherine Squibb, Vern Walker, Lauren Zeise, and numerous others. I had the opportunity to present much earlier versions of some of the chapters of the book (which would now be unrecognizable) to the Southern California Law and Philosophy Discussion Group. Comments by Gregory Keating, Larry Solum, Sharon Lloyd, Steve Munzer, Marshall Cohen, Aaron James, Cynthia Stark, and Chris Naticchia early on assisted the development of the ideas in the text.

I have had the good fortune to deepen my understanding of science, scientific reasoning, and aspects of the law as a result of several kinds of experiences.

Early research on risk assessment and an appointment as a Congressional Fellow in 1987, where I served at Congress's Office of Technology Assessment, provided important background. Service on California's Proposition 65 Science Panel in the early 1990s, a recent appointment to California's Electric and Magnetic Fields Science Advisory Panel (1999–2002), and membership on the University of California, Irvine's, Scholars Committee to Evaluate Perchlorate (2003–2004) gave me the opportunity to see up close numerous examples of scientific studies, scientific reasoning, interpretations of evidence, and even legitimate disagreements between well-respected scientists. I was a participant on these panels but also an observer of them. I gained much from both roles. Attendance at annual meetings of the Collegium Ramazzini and conversations with Fellows of the Collegium have kept me in touch with leading researchers and developments in cancer research. Considerable contact with members of the University of California scientific community also has been invaluable. Jerry Last, long-time director of the University of California's Toxic Substances Research and Teaching Program, should be mentioned, not so much for particular contributions to this project, but for enticing me down this path, trenchant comments along the way, and a good deal of financial and other support over the years. Raymond Neutra pointed me toward important methodological research that was ultimately quite valuable. I owe special thanks to David Eastmond, Chair of the Environmental Toxicology Program, a coauthor and collaborator. I could always call on him to provide examples or references, to make suggestions for extending the ideas, to read something I had written, and to ensure that I understood scientific points and had expressed them correctly. A joint research project with Dave funded by National Science Foundation Grant No. 99–10952 ("A Philosophic and Scientific Investigation of the Use of Scientific Evidence in Toxic Tort Law") together with grants from the University of California's Toxic Substances Research and Teaching Program greatly facilitated background research as well as work on the book itself. Intramural funds from the University of California, Riverside, assisted along the way. The writings of and many conversations with my colleague Larry Wright, a nearly career-long student of nondeductive inferences, have deepened my understanding of the forms of argument that are central to science.

Contacts with practicing lawyers and scientific witnesses and brief involvement in some litigation have provided more ground-level views of the law and some of the hurdles faced by lawyers and experts in presenting science in toxic tort cases. Many, many conversations with Joe Cecil over the years have challenged and clarified my thinking on these issues. Joe and several anonymous reviewers provided immensely valuable comments on the submitted version of the manuscript that greatly improved the final version. John Berger of Cambridge University Press has been a supportive and imaginative editor for this project. Although I have learned from many in working on this book, none of them is responsible for any errors or shortcomings in the final product. The

love and support of my family – Crystal, Chris, and Taylor – have made the task much easier (although their patience with discussions of toxicants, law, or science may be approaching a limit).

I have tried to present some of the actual and potential transformations in toxic tort law as a result of recent legal decisions and how it could better incorporate and utilize complex scientific evidence in the future to achieve its goals. I hope this helps others to think further about the issues and to better understand this part of our legal system.