

Introduction:

The Mark Zuckerberg quote comes from an interview done for Y Combinator's "How to Build a Future"-series and can be found here: <https://www.ycombinator.com/future/mark/>

Franklin Foer spoke about what Silicon Valley's business model does to our thinking in conversation with Keith A. Spencer, the text of the interview can be found here: <https://www.salon.com/2017/09/10/interview-franklin-foers-world-without-mind-describes-how-algorithms-erode-free-will/>

In 1995, Richard Barbrook and Andy Cameron endeavored to describe to describe "dotcom neoliberalism" as "the California ideology," an ideology which concerns some of the nexus this book will deal with (<https://www.metamute.org/editorial/articles/californian-ideology>). I do not use this term because, as will become clear, I do not think that the combination of counter culture and Ayn Rand is as counterintuitive as Barbrook and Cameron thought it was. If anything, the time that has elapsed since their essay has shown deep and troubling compatibilities. Nevertheless, their presentation is very much worth checking out. Similarly, for the conceptual underpinnings of tech's regulatory capture since the early 2000s, see: Jonathan Taplin, *Move Fast and Break Things: How Facebook, Google, and Amazon Cornered Culture and Undermined Democracy* (New York: Hachette, 2017), 127f.

The McLuhan-quote can be found in Marshall McLuhan, *Understanding Media*, ed. Terrence Gordon (Berkeley: Gingko Press, 2017), 31.

I owe my sense that algorithms, incentive structures and gamification are clearly intended to push Uber and Lyft drivers towards something resembling full employment without being full employees, from hours spent talking to individual drivers across the Bay Area, as well as hanging out on online forums that cater to gig workers. For an incredibly brilliant on-the-ground report and analysis of gamification and algorithms in rideshare apps, see Sarah Mason's article "Chasing the Pink" in *Logic-magazine's Play-issue* (Issue 6, Winter 2018), pp. 17-32.

Much has been written about Silicon Valley's peculiar cult of personality. I recommend Sunny Bains's analysis (see for example: <https://blog.oup.com/2019/03/theranos-cult-of-personality-science-tech/>), because she shows how this cult works in the actual operation of companies. This is because I find the observation that there is something "prophetic" or "messianic" and therefore religious about the devotion such figures inspire on the whole unconvincing. Or, at least, I don't see why the connection to religion tells us anything that a sociology of the firm doesn't.

The figure of the "thought leader" is explored in both its origins in the 60s counterculture and in the fictions of Ayn Rand, by Satiajit Das, *Extreme Money: Masters of the Universe and the Cult of Risk* (London: FT Publishing, 2011).

“Learn to code”: For a thoughtful but impassioned takedown of why “selling coding as a ticket to economic salvation for the masses is dishonest,” see Basel Farag, “Please don’t learn to code”: <https://techcrunch.com/2016/05/10/please-dont-learn-to-code/>

I take Stephen Adams’s point about Silicon Valley boosterism emerging from an attempt to reverse a brain drain from the West to the East Coast of the United States from his article “Regionalism in Stanford’s Contribution to the Rise of Silicon Valley,” *Enterprise and Society*, Vol. 4, No.3 (September 2003), 521-543.

The quotes from Fred Turner in this chapter come from an interview I conducted with him in August 2018.

The quotes from Eric Roberts in this chapter and others come from an interview I conducted with him in November of 2019.

David Kelley’s TED Talk can be found at https://www.ted.com/talks/david_kelley_human_centered_design/transcript#t-61821

I drew on Edward Hoffman’s biography on Maslow, *The Right to Be Human* (New York: McGraw Hill, 1999). The Esalen-connection is described on page 273f.

Chapter 1: Dropping Out

The CNN headline can be found here: <https://money.cnn.com/2014/10/16/technology/theranos-elizabeth-holmes/index.html>

Holmes’s financing is described by John Carreyrou in *Bad Blood* (John Carreyrou, *Bad Blood: Secrets and Lies in a Silicon Valley Startup* (New York: Knopf, 2018).

The Bill and Melinda Gates Foundation’s report on a “dropout epidemic” can be found here: <https://docs.gatesfoundation.org/Documents/thesilentepidemic3-06FINAL.pdf>

Terry Winograd was Larry Page’s advisor when Page was pursuing a PhD at Stanford (<https://www.wired.com/2005/08/battelle/>). It seems that a lot of the foundational work for Google’s tech was done during this time. In 2001, Page and Brin wrote an academic paper on PageRank, the algorithm behind Google’s search, and Winograd was listed as a fourth author (<http://ilpubs.stanford.edu:8090/422/>).

Harvard’s core requirement during the years Mark Zuckerberg attended the school can be found here: <http://registrar.fas.harvard.edu/files/fas-registrar/files/2003-2004.pdf>

The CNBC report can be found here (<https://www.cnbc.com/2017/03/13/mark-zuckerberg-says-he-learned-more-from-a-hobby-than-he-did-at-harvard.html>), but it references a 2017 town hall at North Carolina A&T State University — the question begins at around the 36-minute mark: <https://www.facebook.com/zuck/videos/10103568956499361/>

The course description for Drug Delivery in the 21st Century can be found archived here: http://web.stanford.edu/dept/registrar/bulletin_past/bulletin02-03/pdf/ChemEng.pdf

Elizabeth Holmes using the phrase “I was trained as an engineer” can be found in an interview with Charlie Rose. The full quote reads: “I was trained as an engineer, and I would like to think of myself as an engineer, but now my time is spent trying to realize this mission.” <https://www.bloomberg.com/news/videos/2015-06-04/elizabeth-holmes-ceo-of-theranos-charlie-rose-06-04->

Robert Greenfield, *Timothy Leary: A Biography* (New York: Harcourt, 2006).

Timothy Leary, *Turn On, Tune In, Drop Out* (Berkeley: Ronin Publishing, 1999).

Allen Ginsberg, *Howl and Other Poems* (San Francisco: City Lights, 2002). 9.

Hermann Hesse, *Steppenwolf*, translated by Basil Creighton (New York: Macmillan, 2002), 175. For an essay of Leary’s that exemplifies how the 60s read Hesse, see: Timothy Leary, *The Politics of Ecstasy* (Berkeley: Ronin Publishing, 1998).

Huxley’s view of antipodes (and the origins of the metaphor) are explored in: Aldous Huxley, *Complete Essays: 1939-1965, Vol. 5* (Chicago: Dee, 2002), 9-15.

Ken Kesey, *One Flew Over the Cuckoo’s Nest* (New York: Signet, 1962), 192.

Robert Heinlein, *Stranger in a Strange Land* (New York: Penguin, 2016), 242.

Ram Dass, *Be Here Now* (San Cristobal, NM: Lama Foundation, 2010). [TIL: Lama Foundation is apparently now a subsidiary of Random House Bertelsman, so ... that’s depressing]

On Turner’s description of the “cybernetic counterculture,” see: Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (Chicago: Chicago University Press, 2006), 42f.

On former Stanford president John Hennessy’s relationship to investing in Silicon Valley companies, including ones started by students, see: <https://www.wsj.com/articles/SB117226912853917727>.

“That’s a bus. You invented a bus”: The tweet can be found here <https://twitter.com/joshbutler/status/847189801967132672?lang=en>

Chapter 2: Content

“Has to live in the utmost proximity created by our electric involvement in one another’s lives”:
Marshall McLuhan, *Understanding Media*, ed. Terrence Gordon (Berkeley: Gingko Press, 2017),
55.

On the counterculture, cyberculture and McLuhan, see: Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (Chicago: Chicago University Press, 2006), 52-55.

“Like the juicy piece of meat carried by the burglar to distract the watchdog of the mind”:
Marshall McLuhan, *Understanding Media*, ed. Terrence Gordon (Berkeley: Gingko Press, 2017),
31.

On the death of the Tumblr ecosystems, see e.g. this from *The Washington Post*:
<https://www.washingtonpost.com/business/2018/12/04/tumblrs-nudity-crackdown-means-pornography-will-be-harder-find-its-platform-than-nazi-propaganda/>

The filings in *Tasini et al. v. AOL, Inc. et al.* can be found here:
<https://law.justia.com/cases/federal/district-courts/new-york/nysdce/1:2011cv02472/377767/33/>

The filings in *Panzer v. Yelp* can be found at Santa Clara University Law School here:
<https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1544&context=historical>

Annika Butler-Wall’s dissertation project is titled *Gender and Labor in the Digital Age*. You should be able to find it in a university library near you in 2021.

The gender politics of Yelp (the actual company as opposed to the platform) do not come from Butler-Wall, but rather from a short interview I did with an early employee of the company.

Both I and my fact checker have tried to get in touch with Snowflake several times to find out what they were going for with the ad. We never heard back, but in September 2020, the same company raised heckles by another stunt, projecting its logo onto San Francisco City Hall on the occasion of their IPO: <https://sfist.com/2020/09/18/a-company-called-snowflake-projected-its-name-on-city-hall-and-the-city-is-now-mad/>

For a recent in-depth study of Section 230 of the Communication Decency Act, see: Jeff Kosseff, *The Twenty-Six Words that Created the Internet* (Ithaca: Cornell University Press, 2019).

Jack Dorsey's *Rolling Stone* interview came out in January 2019 and can be found archived here: <https://www.rollingstone.com/culture/culture-features/twitter-ceo-jack-dorsey-rolling-stone-interview-782298/>

Chapter 3: Genius

White's essay is quoted in Mimi Reisel Gladstein (editor), *The Ayn Rand Companion* (Westport: Greenwood Press, 1984), 93.

For background I have relied extensively on my colleague Jennifer Burns's excellent *Goddess of the Market: Ayn Rand and the American Right* (New York: Oxford University Press, 2009).

"How it was possible, in those graceless years of transition": Ayn Rand, *Anthem*: I couldn't help myself and used the Project Gutenberg free version, because I'm a taker:

<https://www.gutenberg.org/files/1250/1250-h/1250-h.htm>

Pixar's Randianism has been the subject of much debate online. Director Brad Bird (*Ratatouille*, *The Incredibles*, *Tomorrowland*, and *Mission Impossible: Ghost Protocol*) has been strongly identified with her ideas (A.O. Scott's [review](#) of *The Incredibles* makes the case quite clearly), although others have pushed back against this – here for instance is Emily VanDer Werff in Vox: <https://www.vox.com/culture/2018/6/27/17504376/brad-bird-incredibles-objectivist-ayn-rand>. It's curious that online commentary seem to regard identifying Randian elements in Bird's films as somehow criticisms – as opposed to simply ideas that, in children's entertainment are indeed unusual and fun to talk with kids about. As Mark Fischer and others have pointed out, though, there are plenty of Pixar films with which Bird seems to have had no involvement, that nevertheless make some fairly similar points. Rather than say that Pixar's films are straightforwardly objectivist, it might be better to say that they represent a typical Bay Area mix of Rand's ideas with counterculture tropes.

"Gestural anti-capitalism": Mark Fischer, *Capitalist Realism* (Ropley: O Books, 2009), 12.

Jeff Rigenbach, "The Disowned Children of Ayn Rand," *Reason* (Dec. 1982). The article is archived here: <https://reason.com/1982/12/01/the-disowned-children-of-ayn-r/>

"Libertarian counterinsurgency": Jonathan Taplin, *Move Fast and Break Things: How Facebook, Google, and Amazon Cornered Culture and Undermined Democracy* (New York: Hachette, 2017), 67.

Thomas Frank, *The Conquest of Cool: Business Culture, Counterculture and the Rise of Hip Consumerism* (Chicago: University of Chicago Press, 1997).

Fred Turner on the *Whole Earth Catalogue*: Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (Chicago: Chicago University Press, 2006), 69.

For an explication of the genius aesthetic and its historic emergence, see Hans-Georg Gadamer, *Truth and Method*, translated by W. Glen-Doepel, Joel Weinsheimer, and Donald G. Marshall (London: Bloomsbury, 2013), 55f.

“Perhaps, in those days, there were...”: Ayn Rand, *Anthem*, <https://www.gutenberg.org/files/1250/1250-h/1250-h.htm>

Theodor W. Adorno, *Minima Moralia: Reflections from Damaged Life* (London: Verso, 2005), 50.

Chapter 4: Communication

“A society of island universes”: Aldous Huxley, *Complete Essays: 1939-1965, Vol. 5* (Chicago: Dee, 2002), 159-160.

On the origins of the Human Potential Movement, see: Walter Truett Anderson, *The Upstart Spring: Esalen and the Human Potential Movement* (Lincoln: iUniverse, 2004), 9-15.

On Esalen and TRAC, see: Jeffrey Kripal, *Esalen: America and the Religion of No Religion* (Chicago: University of Chicago Press, 2011), 334.

“How people are changed by the instruments they employ”: The distinction between a descriptive and a transformational theory of communication comes from a lecture McLuhan gave in 1974, the relevant clip can be found here – <https://www.youtube.com/watch?v=SLQzEGDBpyw>

John Durham Peters, *Speaking Into the Air: A History of the Idea of Communication* (Chicago: University of Chicago Press, 2012), 10-21.

Karp’s Frankfurt dissertation (*Aggression in der Lebenswelt*) can be found archived here. It is obviously in German: <https://core.ac.uk/download/pdf/14505332.pdf>

The quote on page 85 (“respect for certain social taboos”/“die Rücksicht auf Tabus einer Gesellschaft”) is on page 125.

Since I wrote this book, Moira Weigel has written about the document here: Moira Weigel, “Palantir Goes to the Frankfurt School,” *boundary 2*. The article is archived here: <https://www.boundary2.org/2020/07/moira-weigel-palantir-goes-to-the-frankfurt-school/>

Jürgen Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, translated by Thomas Burger (Cambridge: MIT Press, 1991).

“Google’s Ideological Echo Chamber,” a.k.a. the “Google Memo” is archived here: <https://www.documentcloud.org/documents/3914586-Gogles-Ideological-Echo-Chamber.html>

David Brooks’s view of the Google Memo expressing a “legitimate tension” and handwringing about Google’s reaction to the Memo can be found here: <https://www.nytimes.com/2017/08/11/opinion/sundar-pichai-google-memo-diversity.html>

“Enlightened false consciousness”: Peter Sloterdijk, *The Critique of Cynical Reason*, translated by Andreas Huyssen (Minneapolis: University of Minnesota Press, 1987).

Peters’s characterization of the troll comes from: John Durham Peters, “U Mad?”, *Logic Magazine*, Issue 6: Play (Winter, 2018). It is archived online here: <https://logicmag.io/play/u-mad/>

Angela Nagle, *Kill All Normies: Online Culture Wars from 4Chan and Tumblr to Trump and the Alt-Right* (Winchester: Zero Books, 2017), 25.

Nick Srnicek, *Platform Capitalism* (Cambridge: Polity, 2017), 47.

Edgar Allan Poe, “The Imp of the Perverse” in *The Collected Tales and Poems of Edgar Allan Poe* (New York: Modern Library, 1992), 280-284.

Ralph Hartley’s paper “Transmission of Information” was presented at the amazingly-named International Congress of Telegraphy and Telephony (!) in Lake Como (!), Italy in 1927 and published in the July 1928 issue of the *Bell System Technical Journal* (Vol. 7, No. 3). It can be found (behind a paywall) here: <https://onlinelibrary.wiley.com/doi/abs/10.1002/j.1538-7305.1928.tb01236.x>

I should mention that I could make heads or tails of what Hartley meant until I read Jimmy Soni and Rob Goodman’s *A Mind at Play: How Claude Shannon Invented the Information Age* (New York: Simon & Schuster, 2017). The discussion of Hartley occurs from p. 132 onwards.

Susan Sontag, “Fascinating Fascism,” in *Under the Sign of Saturn: Essays* (New York: Picador, 2012), 73-108.

The slogan *Viva La Muerte* is most famously associated with a confrontation between General José Millán-Astray and the philosopher Miguel de Unamuno in October 1936: Carlos Rojas has written the most in-depth account of the contested details of that day: Carlos Rojas, *Muera la inteligencia! Viva la Muerte: Salamanca, 1936, Unamuno y Millán-Astray frente a frente* (Madrid: Planeta, 1995).

Chapter 5: Desire

Cynthia Haven wrote an excellent biography of Girard: *Evolution of Desire: A Life of René Girard* (Ann Arbor: Michigan State University Press, 2018). What emerges from Haven's portrait is a man whose philosophy (and its pronounced allergy to competition) made him an exceptionally happy fellow traveler – not only was he unlikely to defend his philosophy from cooptation, he was likely to welcome it to some extent. Haven's insights are one reason why I focus on what tech (and above all Thiel) *made* of Girard, not necessarily on what Girard did and intended.

The Thiel-interview can be found here: <https://www.youtube.com/watch?v=esk7W9Jowtc>

“How disturbingly herdlike people become in some many different contexts”: this interview with Thiel can be found here <https://www.youtube.com/watch?v=esk7W9Jowtc>

Peter Thiel and David O. Sacks, *The Diversity Myth: Multiculturalism and Political Intolerance on Campus* (Oakland, CA: Independent Institute, 1995). The quote about multiculturalism on page 104 is from 191 on Thiel's book.

You can find the bonmot about a “bombastic redescription of orthodoxy” from Daniel Dennett's *Darwin's Dangerous Idea* (New York: Simon & Schuster, 2014), page 320). It is about the neo-mystic Teilhard de Chardin.

Joshua Landy, “Deceit, Desire, and the Literature Professor: Why Girardians Exist,” *Republics of Letters*, Vol. 3, Issue 1 (September 2012), 1-21. The article can be found online here: <https://arcade.stanford.edu/rofl/deceit-desire-and-literature-professor-why-girardians-exist>

Geoff Shullenberger, “The Scapegoating Machine,” *The New Inquiry* <https://thenewinquiry.com/the-scapegoating-machine/>

Peter Thiel, Blake Masters, *Zero to One: Notes on Startups, Or How to Build the Future* (New York: Crown, 2014).

Blake Masters's notes for CS 183 can be found here: <https://blakemasters.com/post/24578683805/peter-thiels-cs183-startup-class-18-notes>

Chapter 6: Disruption

Tech's use of the language of disruption is brilliantly analyzed in Jonathan Taplin, *Move Fast and Break Things: How Facebook, Google, and Amazon Cornered Culture and Undermined Democracy* (New York: Hachette, 2017), 20ff.

David Kirkpatrick's *Vanity Fair* profile of Sean Parker with the "Loki character"-line appeared in September 2010, and can be found here: <https://www.vanityfair.com/culture/2010/10/sean-parker-201010>

Joshua Gans, *The Disruption Dilemma* (Cambridge: MIT Press, 2016).

For a classic articulation of modernity as a disruption of traditional lifecycles, see: Georg Simmel, "The Metropolis and Mental Life," in *The Sociology of Georg Simmel*, translated by Kurt Wolf (New York: Simon & Schuster, 1950), 409-424. The idea of modern experience as one for which "the experience of shock has become the norm" comes from Walter Benjamin, "On Some Motifs in Baudelaire," in *The Writer of Modern Life: Essays on Charles Baudelaire*, translated by Michael Jennings (Cambridge: Harvard University Press, 2006), 177.

Baudelaire's poem is "Le Cygne" ("The Swan"), one of the most famous of his *Flowers of Evil* (*Les Fleurs du mal*, 1857). It is one of the guiding texts for Benjamin's investigation into Baudelaire's modernism, and can be found online here: <https://fleursdumal.org/poem/220>

The strange mix of modishness and outmodedness, the fact that modernity's disruptiveness always implies a surfeit of ruins, remainders, and relics, is the main theme – albeit never expressed very straightforwardly – in Walter Benjamin's monumental *Arcades Project* (Walter Benjamin, *The Arcades Project*, translated Howard Eiland and Kevin McLaughlin (Cambridge: Belknap, 1999), especially convolutes B, C, D, and I). For a thorough exploration of Benjamin's fragmentary work see: Susan Buck-Morss, *The Dialectics of Seeing: Walter Benjamin and the Arcades Project* (Cambridge: MIT Press, 1991).

The passage from The Communist Manifesto can be found in many places (Karl Marx and Friedrich Engels, *Manifesto of the Communist Party*, translated by Samuel Moore (Chicago: Kerr, 1906), 17), but the translation is also available online here: <https://www.marxists.org/archive/marx/works/1848/communist-manifesto/>. The passage in question also lends its title to Marshall Berman's *All That Is Solid Melts Into Air* (New York: Penuin, 1988), which represents an excellent and accessible summary of Marxist thought about modernity and its impact on everyday experience.

The classic overview of Schumpeter's life and work seems to be Thomas K. McCraw, *Prophet of Innovation: Joseph Schumpeter and Creative Destruction* (Cambridge: Belknap, 2007). I should not that I diverge in my reading of Schumpeter from McCraw's, at least when it comes to the question of how Schumpeter viewed the future of capitalism.

"The fundamental impulse that sets and keeps the capitalist engine in motion": Joseph A. Schumpeter, *Capitalism, Socialism and Democracy* (New York: Harper & Brothers, 1942), 83.

Nick Land, "A Quick-and-Dirty Introduction to Accelerationism," *Jacobite Magazine*: <https://jacobitemag.com/2017/05/25/a-quick-and-dirty-introduction-to-accelerationism/>

It's pretty academic, but for the best overview of Heidegger's concept of *Gelassenheit* and how it is not just about a suspension of willing, but a suspension of "projection" into the future, see: Bret W. Davis, *Heidegger and the Will* (Evanston: Northwestern University Press, 2007). However, Davis elsewhere points out that Heidegger did not extend this idea of "letting go" (or, as he puts it, "releasement") to our relationship to technology – we're not supposed to lean into tech, instead tech is a form of willing from which we have to release ourselves. See: Bret W. Davis, "Heidegger's Releasement From Technological Will" in Aaron James Wendland et al. (eds.), *Heidegger on Technology* (New York: Routledge, 2019), 133-148.

Ray Kurzweil, *The Singularity is Near: When Humans Transcend Biology* (New York: Penguin, 2005), 10-11.

Richard L. Nolan, David C. Croson, *Creative Destruction: A Six-Stage Process for Transforming the Organization* (Cambridge: Harvard Business School Press, 1995).

"Forgetfulness is a property of all action": Friedrich Nietzsche, "On the Use and Abuse of History," trans. Adrian Collins (New York: Bobbs Merrill, 1957), 6-7.

Jim Cramer's interview with Elizabeth Holmes, in all its cringey glory, can be found here: <https://www.youtube.com/watch?v=rGfaJZAdfNE>

Chapter 7: Failure

The quotes from Cass Philipps are largely from an interview I did with her in the March 2019. The quotes from insiders come from interviews a mergers and acquisition attorney, a startup founder, and two venture capital investors who prefer to remain anonymous. Parts of this chapter are based on an essay I published in the "Failure"-issue of *Logic*-magazine: Adrian Daub, "The Undertakers of Silicon Valley," *Logic* (Issue 5: Failure). It can be found online here: <https://logicmag.io/failure/the-undertakers-of-silicon-valley/>

Samuel Beckett, "Worstward Ho!" In Samuel Beckett, *Nohow On* (New York: Grove, 2014), 90.

A transcript of Mark Zuckerberg's Harvard commencement speech can be found here: <https://qz.com/992048/mark-zuckerbergs-harvard-speech-a-full-transcript-of-the-facebook-ceos-commencement-address/>

The *New York Times* article on Cass Philipps and FailCon can be found here: <https://www.nytimes.com/2014/11/09/business/wearing-your-failures-on-your-sleeve.html>

"I've missed more than 9,000 shots in my career": This is a detail I take from John Carreyrou, *Bad Blood: Secrets and Lies in a Silicon Valley Startup* (New York: Knopf, 2018). *Bad Blood*

The Hegel-quote comes from G.W.F. Hegel, *The Philosophy of History*, trans. J. Sibree (New York: Colonial, 1899), 21.

Lee Vinsel, “Design Thinking is Kind of Like Syphilis – It’s Contagious and it Rots Your Brain,” *Medium*, Dec. 6, 2017:

<https://blog.usejournal.com/design-thinking-is-kind-of-like-syphilis-its-contagious-and-rots-your-brains-842ed078af29>

Bill Burnett, Dave Evans, *Designing Your Life: How to Build a Well-Lived, Joyful Life* (New York: Knopf, 2016).

“No matter where he directed his campaigns, fortune consistently favored him”: Herodotus, *The Histories*, translated by Tom Holland (New York: Penguin, 2015).