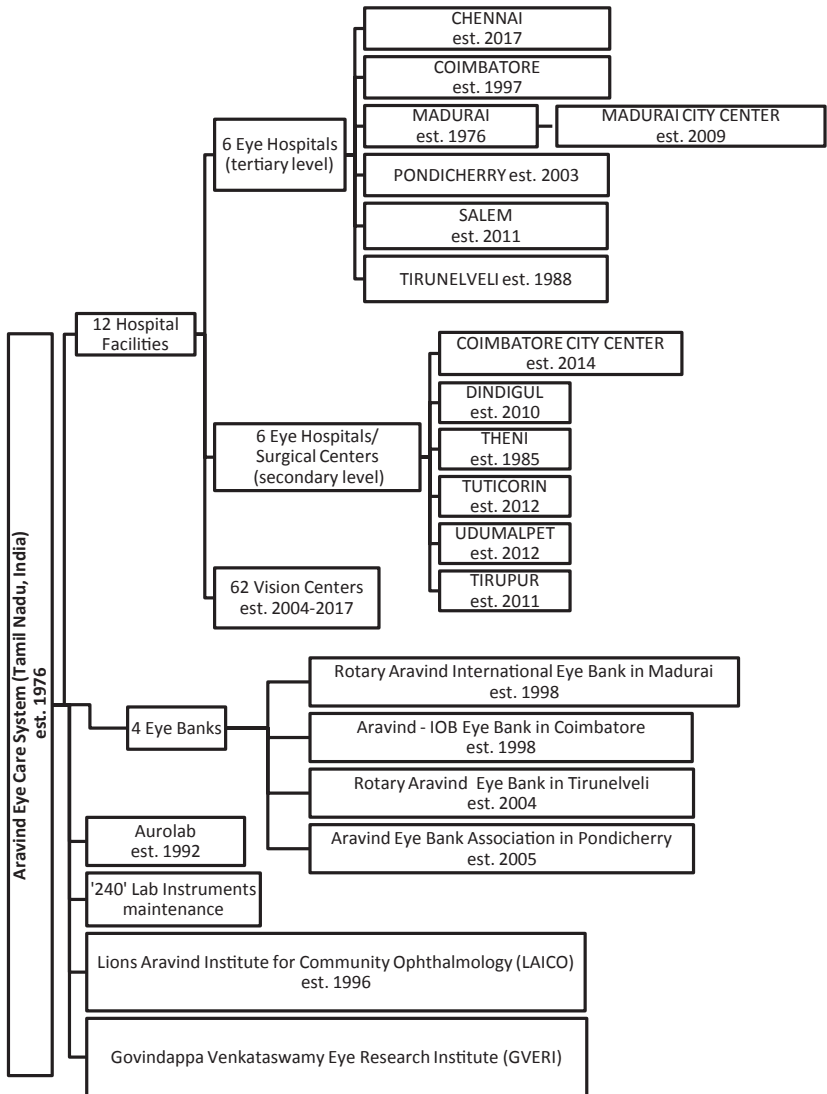
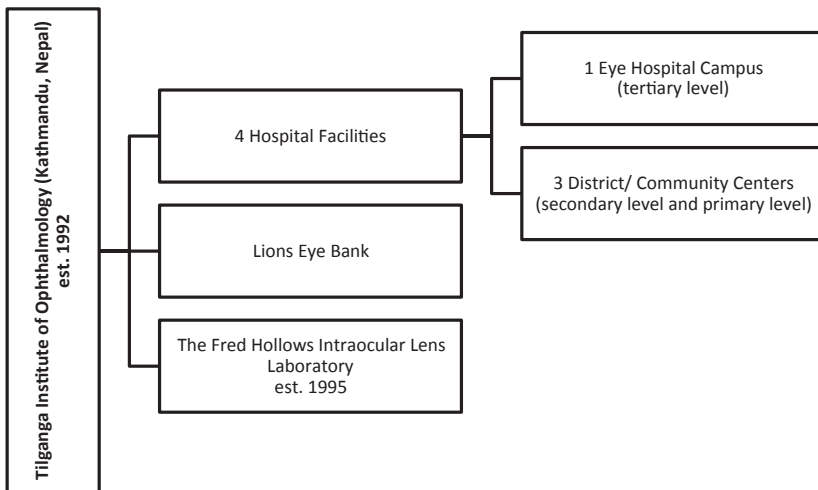


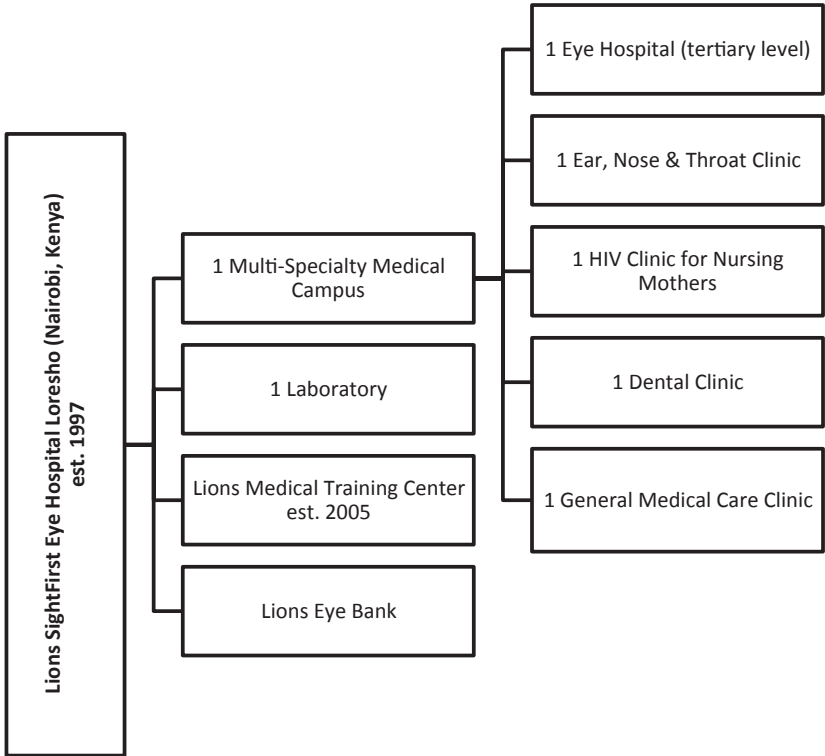
# Organizational Charts for Four Community Ophthalmology Units



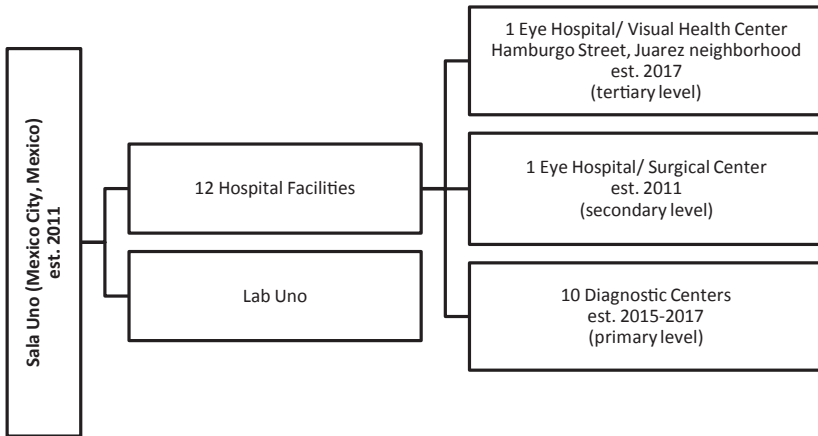
Aravind Eye Care System organizational chart



Tilganga Institute of Ophthalmology organizational chart



Lions SightFirst Eye Hospital-Loresho organizational chart



Sala Uno organizational chart

# Glossary of Common Ophthalmology Surgical Terms

Quite a few terms that are commonly used by ophthalmologists are found in this book. The terminology that is most frequently repeated has been defined below.

**Cataract** A cataract occurs when the natural lens becomes opacified (i.e., cloudy). This cloudiness is visible to others looking into the eye and prevents the lens from focusing light properly into the back (posterior) of the eye organ.

**Cornea** The top layer of cells of the eye organ, like the natural lens of the eye, has an important role to play in focusing light properly into the posterior of the eye.

**Couching** This is an ancient surgical process by which a cataractous natural lens is displaced from its position, but remains inside of the eye organ. The patient then receives partial sight restoration (unless and until the dead natural lens tissue causes infection and loss of the entire eye). However, according to Western medicine, it has not been a reputable method of cataract surgery since the early 1900s.

**Extracapsular cataract extraction (ECCE)** A French ophthalmologist, Jacques Daviel, first published this novel method of extracapsular cataract surgery in 1748 (Rucker 1965). It is a manual form of cataract surgery where the natural lens is separated from the natural lens capsule (a thin translucent membrane or sac that is also called the capsular bag) and then the natural lens is drawn out of the eye. Extracapsular cataract extraction

leaves the natural lens capsule predominantly intact and the intraocular lens is placed inside.

**Intraocular Lens (IOL)** Invented by Dr. Harold Ridley in Britain during the 1940s, this ophthalmic consumable mimics the shape and size of the natural lens used to focus light onto the retina located in the back (or posterior) of the eye (Apple and Sims 1996, Apple 2006). The natural lens is necessary for each eye so that a person's brain can produce images. However, this ophthalmic consumable is typically made out of stiff plastic called Perspex™ or acrylic (with the chemical name of poly-methyl-methacrylate). After surgery is performed to remove the natural lens, the ophthalmologist carefully places this plastic lens inside of the eye.

**Intracapsular Cataract Extraction (ICCE)** A British surgeon born in Jamaica, Samuel Sharp, first published this novel method of intracapsular cataract surgery in 1753 (Hubbell 1904). It was popularized in the 1920s by a British civil servant, the Irish ophthalmologist Col. Smith, who was working in the western part of British India (Knapp 1908; Smith 1910). Intracapsular Cataract Extraction (ICCE) is a manual form of cataract surgery where the eye organ is cut into, the entire natural lens capsule and natural lens is separated from the inside of the eye, and, then removed from the eye. Typically, patients are given aphakic cokebottle glasses to restore their sight after this procedure.

**Laser-phacoemulsification (Laser-Phaco)** Invented in 1986 by an African-American surgeon, Dr. Patricia Bath, this microsurgical technique uses a nanosecond laser probe to precisely disintegrate the natural lens in a process of emulsification (Croes 1987; Davidson 2005). Then, the lens pieces are removed from the natural lens capsule in a process of irrigation and aspiration. Typically, an intraocular lens is placed into the natural lens capsule after this procedure to restore vision. Laser-Phaco is not to be confused with LASIK.

**Laser-Assisted in Situ Keratomileusis (LASIK)** This is a surgical procedure that uses lasers to change the shape of the cornea to improve sight in a manner analogous to but more permanent than eyeglasses or contact lenses. It is mentioned here only to distinguish it from the cataract surgery procedures discussed in this book. LASIK, while commonly performed in high-income populations around the world to improve visual acuity, is not sight restoring (like cataract surgery).

**Mini-nuc** Mini-nuc was invented by Israeli ophthalmologist, Dr. Michael Blumenthal, in the early 1990s and is also a reinvention of extracapsular

cataract extraction. In Blumenthal's (2002) technique, the natural lens is separated from the natural lens capsule and then removed from the eye through a small, self-sealing, sclera-corneal, tunnel incision.

**Phacoemulsification (Phaco)** Invented in 1967 by a Caucasian-American surgeon from New York State, Dr. Charles Kelman, this non-manual microsurgical technique uses an ultrasound probe to vibrate, break apart, and dissolve the natural lens in a process of emulsification (Hillman 2017). Then, the lens pieces are removed from the natural lens capsule in a process of irrigation and aspiration. Patients sometimes call it “the laser surgery,” even though it does not use lasers. Typically, an intraocular lens is placed into the eye after this procedure.

**Small incision cataract surgery (SICS) or Manual-SICS (M-SICS)** Nepalese ophthalmologist, Dr. Sanduk Ruit of Tilganga Institute of Ophthalmology, first published this novel, manual microsurgical technique in 2000 (Ruit et al. 2000). It uses water pressure to break the natural lens into pieces in a process of hydrodissection. Then, the lens pieces are removed from the natural lens capsule in a process of irrigation and aspiration. Typically, an intraocular lens is placed into the eye after this procedure. SICS is a reinvention of mini-nuc.

**Suture** An ophthalmic consumable often made from very thin silk; this thread is used by ophthalmologists to sew surgical cuts closed.

**Viscoelastic** An ophthalmic consumable made from tinted soft plastic of similar mass and viscosity to the aqueous humour. Aqueous humour is a gelatinous substance inside the anterior chamber of the eye (the area in the front of the eye between the cornea and the natural lens). This soft plastic is often used during eye surgeries to maintain the correct intraocular pressure and the positions of various tissues within the anterior chamber of the eye.

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# Index

## A

- Actors  
  dominant 2, 221, 257. *See also*  
    Incumbent actors  
  intermediate space 39. *See also*  
    Challenger  
    subordinate 2. *See also* Challenger  
Pollock, Anne 3, 15, 16  
Appropriate technology 3, 4, 6,  
  17, 24, 26–28, 80–86,  
  88, 98, 101–103, 113,  
  114, 137, 139, 148, 152,  
  156, 162, 174, 184, 206,  
  208–210, 223, 256, 264,  
  280, 290–292, 294, 296,  
  298, 302, 305, 339. *See also*  
  Intermediate technology;  
  Kaplinsky, Raphael; Sussex  
  Manifesto; Schumacher,  
  Ernst F.; Willoughby, Kelvin  
Arnold, David 14, 44, 86

## B

- Basalla, George 15, 219, 318  
Bath, Patricia E. 9, 37, 54, 56, 203,  
  326. *See also* Community  
  ophthalmology, definition  
  of; Laser phaco  
Benjamin, Ruha 175, 306  
Bourgeoisie 83, 114, 229, 259,  
  261  
Brilliant, Larry 44, 54, 55, 58, 59,  
  117, 159  
Buddhist economics 17. *See also*  
  Limited growth economics;  
  Middle path

## C

- Chakrabarty, Dipesh 14  
Challenger 2, 14, 20, 22–25, 40,  
  81–83, 114, 147, 148,  
  184, 206, 222, 224, 255,

- 257–259, 281, 294, 297,  
300, 302, 303, 306, 310
- Circulation  
bidirectional 184, 220, 276, 294  
unidirectional 16, 102, 103, 125,  
185, 233, 257
- Clarke, Adele 196, 315
- Clarke, James A. 117, 199, 234, 235
- Collins, Harry 181, 205
- Colonial exploitation 16
- Community ophthalmology, defini-  
tion of 9
- Crystal Eye Clinic 117, 199, 235
- D**
- Decolonialism 260, 261
- Dependency 15, 16, 294, 302
- Developmentalism 15, 146, 162,  
168, 169, 261, 264, 280,  
295, 317. *See also* Basalla,  
George
- Disinterested 115, 116, 123, 139,  
261
- Dotson, Kristie 275
- E**
- Economies of scale 12, 98, 338
- Economies of scope 12, 222, 305
- Elite 16, 17, 39, 84, 85, 87, 102,  
115, 233, 259, 260,  
292, 303, 307. *See also*  
Bourgeoisie; High status
- Endogenous Development 3, 6, 86,  
87, 104, 114, 139, 294, 295,  
307  
innovations from below 281
- Enoughness 81–84, 293, 295, 308
- Escobar, Arturo 7, 15, 16
- Eye Hospital  
Aravind Eye Care System 2, 6, 64,  
77, 78, 80, 88–94, 96, 97,  
99, 100, 103, 111–113, 116,  
117, 119–121, 124, 126,  
127, 129, 135, 151, 152,  
162, 173, 194, 206, 207,  
217, 218, 231, 237, 241,  
242, 254, 270, 277, 290,  
319, 323–326, 333, 338,  
354
- Crystal Eye Clinic 117, 199, 234,  
235
- Lions SightFirst Eye Hospital–  
Loresho 5, 79, 97, 100, 231,  
236, 245, 319, 324, 325,  
339–341, 356
- L.V. Prasad Eye Institute 64, 96,  
136, 272
- Madras Eye Infirmary 42
- Nepal Eye Hospital 57–59, 150,  
156, 164, 165, 172
- Pacific Vision Foundation The Eye  
Institute 309, 310
- Sala Uno 5, 6, 79, 80, 88, 95, 97,  
100, 122, 200, 201, 209,  
228, 238, 239, 253, 254,  
278, 281, 299, 300, 309,  
319, 320, 324, 328, 329,  
342–344, 346, 347, 357
- Tilganga Institute of  
Ophthalmology 1, 5, 6, 62,  
64, 77, 79, 97, 113, 116,  
124, 129, 130, 152, 181,  
192, 202, 235, 245, 253,  
262, 270, 274, 290, 318,  
319, 324, 333, 334, 337,  
355

## F

- Fanon, Frantz 16, 85, 260, 261
- Feminist Science and Technology Studies 4, 14, 113, 116, 146, 183, 218, 233, 256, 315, 318, 319. *See also* Casper, Monica J.; Clarke, Adele; Dotson, Kristie; Harding, Sandra G.; Lorde, Audre; Pollock, Anne
- Fred Hollows Foundation 99, 147, 163, 164, 166, 170, 207. *See also* Hollows, Fred
- Fujimura, Joan H. 219, 220, 247
- Furlong, Kathryn 19, 20, 296

## G

- Gandhi, Mohandas Karamchand (Mahatma Gandhi) 79, 84, 86, 210, 226. *See also* Inclusive sarvodaya 78–80, 88, 90, 92, 94, 97, 98, 102, 210, 240, 246, 293, 295  
swadeshi 79, 86–88, 94, 102, 333  
swaraj 79, 86, 88, 89, 94, 102, 333
- Geels, Frank 3, 4, 12, 13, 19–22, 38, 81, 82, 102, 114, 148, 207–210, 219, 222, 223, 247, 257, 293, 297–304
- Gilbert, Suzanne 45, 59, 150, 217, 225
- Grasset, Nicole 44, 54, 55, 58–60

## H

- Harding, Sandra G. 3, 7, 16, 115, 219, 220, 260, 261

- Harris, Joseph 39, 65
- Henke, Christopher 19
- Hess, David J. 3, 18, 24, 39, 82, 83, 134, 219, 256–258, 295, 315
- High status 83, 114, 229, 257, 259
- Himalayan Cataract Project 99, 166, 195, 236, 335, 349. *See also* Tabin, Geoffrey
- Hollows, Fred 99, 124, 145–147, 150, 151, 155–157, 163–167, 170, 175, 207, 263, 324, 334–336, 338, 339
- Humanitarian interest 115–117, 124, 133, 138, 139

## I

- IAPB. *See* International Agency for the Prevention of Blindness (IAPB)
- Inclusive 305
- Incumbent actors 2, 11, 14, 20, 22–25, 38, 40, 41, 81–83, 103, 113, 146, 148, 174, 184, 206, 208, 210, 222–224, 255, 257–259, 262, 281, 290, 295, 297, 300, 302, 303, 310
- Innovation  
finance 3, 6, 23, 26, 27, 81, 289  
management 3, 6, 19, 27, 192, 210, 218, 246, 289, 293  
science 3–9, 20, 21, 23, 27, 81, 82  
technology 3–9, 20, 21, 23, 26, 27
- Intermediate technology 151, 174, 291
- International Agency for the Prevention of Blindness

- (IAPB) 10, 37, 38, 45, 48, 51–58, 64, 65, 99, 122, 123, 153–156, 227, 298, 326
- Interstitial 38, 52, 276, 281, 301–304
- Interstitial space 52. *See also* Multi-regime Interactions
- Intraocular Lens Laboratory  
Alcon 13, 14, 151, 172  
Aurolab 147, 154, 157, 159–162, 168, 169, 173, 175  
Tilganga FHIOL 167, 170–172
- J**
- Jobs, Steve 59
- K**
- Kaplinsky, Raphael 17, 18, 80, 83, 85, 97, 98, 100, 101
- Kaplinsky's Dilemma 80, 83–85, 97, 98, 102, 104, 174, 291, 292. *See also* Mass-participation; Mass-production; Policy dilemma
- Kelman, Charles 11, 13, 183, 188, 189, 192, 193
- Kleinman, Daniel L. 101, 134, 221
- L**
- Large scale 17, 292
- Laser phaco 189, 203
- Less modest witness 113, 116, 117, 123, 137
- Limited economic growth 82, 302
- Limited growth 84, 148, 292. *See also* Low profit margin
- Limited growth economics 148
- Lions Clubs International Foundation 10, 95, 96, 99, 124, 225, 227, 323, 339
- Lorde, Audre 205
- Low profit margin 292
- Low status 83
- M**
- Marginalized 7, 8, 88, 115, 116, 163, 182, 196, 259–261, 290, 292, 293, 296, 303, 305, 307, 310. *See also* Low status; Underserved; Unreached
- Mass-participation 84, 86, 292
- Mass-production 84, 86, 292
- Microsurgical Technique  
phacoemulsification 11–13, 26, 182, 183, 185, 188, 189, 191, 192, 194–199, 201–205, 232, 247, 262, 269, 276, 277, 289, 294, 298
- Small Incision Cataract Surgery (SICS) 11, 175, 183–185, 190, 191, 193–195, 198–206, 208, 209, 231, 234–236, 247, 254, 263, 269, 273, 275–278, 290, 294, 299, 305, 308
- Casper, Monica J. 196
- Moore, Kelly 39, 275
- Motivated truth 116, 124, 129, 138, 139
- Multilevel Perspective  
circular causality  
appropriation 183–185, 205, 206, 294, 296  
contestation 255–258, 262, 279–281, 294, 296

- diffusion 18, 175, 294, 296
- Marianne DeLaet 256
- translation 218–224, 228–234, 245–247, 294, 296
- landscape
  - landscape differentiation 298, 299, 301
  - stability 22
- niche
  - appropriate technology niche 80–83, 101–103, 113, 114, 137, 139, 147, 148, 174, 184, 206, 208–210, 223, 290, 291, 294, 298, 302, 305, 338, 339, 347
  - interlocking innovations 210, 218, 219
  - market niche 81, 83
  - niche accumulation 218, 219, 221–224, 245, 303
  - technology niche 81–83, 101–103, 113, 137, 139, 147, 148, 174, 184, 206, 208–210, 223, 289–291, 294, 298, 302, 305, 339, 347
- regime
  - dimensions 22, 293
  - dual regime thesis 2, 4, 14, 20, 21, 23–25, 28, 281, 290, 291, 296, 298, 301, 302, 305, 306
- rules
  - cognitive 38, 39, 64, 65, 78, 80, 92, 114, 174, 209, 210, 222, 295, 302, 303, 308
  - formal 114, 137, 139, 209, 295
  - guiding principles 222
  - ideology 83, 210, 280
  - normative 38, 80, 222, 295, 300, 310, 342
  - norms 38, 280
  - standards 38
  - transition pathways
    - coexistence 299
    - dealignment and realignment 297, 300
    - reconfiguration 22, 25
    - technological substitution 22, 299
    - transformation 21, 22
- Multi-regime Interactions
  - competition 301
  - interstitial birth 301–304
  - symbiosis 301
- N
- Nepal Netra Jyoti Sangh 59–61, 65, 164, 165, 170, 172, 337
- Neutral 116, 117, 124, 139, 261
- O
- Objectivity
  - strong 114, 115, 124, 139, 260. *See also* Humanitarian interest; Less modest witness; Motivated truth; Redfield, Peter; Harding, Sandra G.
  - weak 115, 261. *See also* Disinterested; Neutral
- Ophthalmic Societies
  - American Academy of Ophthalmology 51, 195, 234, 245, 274, 326
  - American Society for Cataract and Refractive Surgery 197, 198

- Asia Pacific Academy of Ophthalmology 2
- European Society for Cataract and Refractive Surgery 270
- International Council of Ophthalmology 51, 55, 186, 274
- the love and the hate 253
- World Ophthalmology Congress 2
- P**
- Padma Shri Govindappa Venkataswamy 45–49, 53, 56, 59, 77–79, 89, 90, 92, 94, 95, 116, 126, 150, 152, 155, 157–159, 161, 169, 222, 223, 225, 231, 242, 247, 259, 260, 326
- Padma Shri Sanduk Ruit 59, 62, 116, 130, 136, 149–152, 154–157, 163–167, 170, 181–183, 185–187, 191–195, 199, 200, 202, 204, 205, 235, 262, 263, 300, 303, 334, 335, 337
- Parthasarathy, Shobita 17, 148, 162
- Phaco 11, 12, 183, 188, 198–204, 206, 208, 308, 310
- Pluralism, Epistemological 274
- Policy dilemma 83, 291
- Postcolonial perspective 15. *See also* Arnold, David; Benjamin, Ruha; Chakrabarty, Dipesh; Colonial exploitation; Decolonialism; Dependency; Fanon, Frantz; Furlong, Kathryn; Wallerstein, Immanuel; Underdevelopment
- Power  
 asymmetric 79, 220  
 bilateral 279, 294  
 uneven 221  
 unilateral 219, 221, 294
- Prasad, Amit 162
- Q**
- Quark, Amy A. 275
- R**
- Redfield, Peter 116, 117, 123, 125, 139
- Ridley, Sir Harold 44, 149, 188
- Royal Commonwealth Society for the Blind 37, 45, 47, 49, 64, 153, 187
- S**
- Scale-up 22, 210, 305. *See also* Economies of scale; Economies of scope; Large scale
- Schot, Johan 12, 13, 19, 21, 22, 38, 81, 207, 208, 222, 298, 300, 304, 305
- Schumacher, Ernst F. 17, 79, 82, 84, 174, 264, 265, 292
- Seely, Bruce 15, 17, 147
- SEVA Foundation 55, 58. *See also* Brilliant, Larry; Gilbert, Suzanne; Grasset, Nicole; Jobs, Steve

- Shrum, Wesley 94, 100, 233
- Sightsavers International 37, 95, 99, 153, 160, 187. *See also* Royal Commonwealth Society for the Blind
- Smith, Adrian 3, 4, 18, 81–83
- Socio-technical System. *See* Multilevel Perspective, Regime
- Sovereignty  
 epistemic 183, 205, 275, 276  
 scientific 28, 175, 307  
 technical 27, 147, 173, 175
- Spivey, Bruce 186, 274, 279
- Sussex Manifesto 17
- Systemic technology choice 3, 21, 255, 279–281, 290, 291, 295, 305
- T**
- Tabin, Geoffrey 78, 193, 195, 236, 335, 349
- Technological momentum 222, 247, 303. *See also* Technological trajectory
- Technological trajectory 13, 25, 81, 82, 295, 303
- Technology policy 87
- Technology-practice 11, 114, 134, 137, 150, 153, 154, 164, 190, 218, 219, 246, 269, 277, 280, 300
- Thulasiraj Ravilla 241
- Translation 3, 22, 25, 27, 218–224, 228–234, 245–247, 280, 281, 293, 294, 306
- U**
- Underdevelopment 15
- Underserved 51, 57, 62, 96
- Unite for Sight 1, 117, 118, 199, 234, 235, 240, 277, 319, 324, 348–350. *See also* Clarke, James A.; Crystal Eye Clinic
- Unreached 27, 56, 115–117, 125, 130, 138, 161, 169, 308
- W**
- Wallerstein, Immanuel 7, 15, 229, 275
- WHO. *See* World Health Organization (WHO)
- Willoughby, Kelvin W. 17, 82, 84, 174
- Wilson, Sir John 10, 37, 45–49, 52–54, 57, 121, 126, 134, 187
- World Health Organization (WHO) 5, 9, 10, 16, 37–39, 42, 45–61, 64, 100, 122, 145, 147, 150, 153, 154, 158, 172, 183, 192, 218, 229–231, 240, 245, 246, 295, 298, 326. *See also* WHO