Free Will as an Open Scientific Problem

Mark Balaguer

A Bradford Book The MIT Press Cambridge, Massachusetts London, England

© 2010 Massachusetts Institute of Technology

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from the publisher.

MIT Press books may be purchased at special quantity discounts for business or sales promotional use. For information, please email special_sales@mitpress.mit.edu or write to Special Sales Department, The MIT Press, 55 Hayward Street, Cambridge, MA 02142.

This book was set in Stone Sans and Stone Serif by the MIT Press. Printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data

Balaguer, Mark.

Free will as an open scientific problem / Mark Balaguer.

p. cm.

"A Bradford book."

Includes bibliographical references and index.

ISBN 978-0-262-01354-3 (hardcover : alk. paper)

1. Free will and determinism. I. Title.

BJ1461.B25 2010

123'.5—dc22

2009012426

10 9 8 7 6 5 4 3 2 1

Index

Abbott, L. F., 153	Antecedent determining control,
Ability to do otherwise, 47–48	99–100
Abstract objects, 184n17	Antimetaphysicalism, 22–24, 167–169
Active control. See Conscious control	Appropriate nonrandomness, 7–13, 83,
Agent causation, 16, 21, 67, 87, 177n16	84–120
event-causal accounts of, 87, 177n16	A priori argument for determinism,
Agent involvedness. See Appropriate	135–137
nonrandomness	A priori argument for libertarianism,
Albert, D., 182n8	137–141
Ambiguity. See Analyses of free will, and	Attacks on metaphysics. See
ambiguity	Antimetaphysicalism
Analyses of free will, 26-45, 50-51,	Aune, B., 171n1, 173n10
55–63, 177n18. See also Conceptual	Austin, J. L., 50, 173n10
analysis	Authorship, 7–10, 84–106. See also
and ambiguity, 55, 59	Plural authorship
and carving nature at the joints, 23,	Autonomy, 36, 44, 61
37 (see also Conceptual analysis, and	Ayers, M. R., 173n10
human-being freedom)	
and coherence, 23, 30, 36, 38-39, 41	Bell, J. S., 182n7, 182n8
and contextualism, 55, 59	Bernstein, M., 92
and human-being freedom, 30, 36-38,	Berofsky, B., 92, 171n1, 173n10,
48–49	173n11
and imprecision, 55–62	Blips. See Neural blips
and incoherence, 59	Blumenfeld, D., 173n14
and moral responsibility, 30, 36,	Bohm, D., 145–146, 182n8
39–45	Bok, H., 5, 46, 171n1, 173n11
and ordinary language, 23, 28–35,	Bramhall, J., 171n3
41, 45	Brasil-Neto, J. P., 163–165
and the issue of what's worth	Broad, C. D., 171n5
wanting, 36, 39-44	Buridan's ass decisions. See Decisions,
and the which-kinds-of-freedom-do-	Buridan's ass
we-have question, 36-38, 45	

Campbell, C. A., 67, 171n3 Confabulation, 54, 143, 163-164 Conscious control, 101-104 Campbell, J. K., 173-174n14 Cartesian dualism. See Mind-brain Consciousness, slowness of, See dualism Slowness of consciousness Carving nature at the joints. See Consequence argument, the, 50-53, Analyses of free will, and carving 173n12 nature at the joints Contextualism. See Analyses of free will, Causation. See Agent causation; and contextualism Libertarianism, event-causal; Contrastive explanations, 117-118 Probabilistic causation Control, 7-10, 84-106 active (see Conscious control) Chance objection to libertarianism. See Luck objection to libertarianism antecedent determining (see Character, 93, 120, 124 Antecedent determining control) Chisholm, R., 67, 171n3, 173n10, conscious (see Conscious control) 174n5, 177n16 lack of, 100, 179n23 Clarke, R., 67, 92, 107, 171n3, 173plural (see Plural control) spontaneous (see Spontaneous 174n14, 174n5 Coherence. See Analyses of free will, control) and coherence Copenhagen interpretation of quantum Coherence question, the. See Question, mechanics, 182n7 Copp, D., 173-174n14 coherence, the Collapse of the wave function, 144-146, Crisp, T., 173n12 148, 155-157 Compatibilism, 3, 4-6, 17-20, 25-63, Dayan, P., 153-154 171n1, 171n2. See also Consequence de Broglie, L., 182n8 argument, the Decisions Compatibilism question, the. See Buridan's ass, 72-73, 79, 120-122 as conscious, intentional, and pur-Question, compatibilism, the Compatibilistic libertarianism. See poseful, 85-89 Libertarianism, compatibilistic non-torn, 120-130 torn, 21-22, 68-70, 71-75, 76-120, Compatibilist intuitions about free will, 57-58 131-135, 141-143, 155-167 Conceptual analysis, 25-30, 35-37, Decoherence, 156, 183n11 41-42, 44, 50-51, 55-63, 88-89, Deecke, L., 159 172n4, 177n18. See also Analyses of Degrees of indeterminacy and L-freefree will dom, 76-83 Deliberation, 113-114, 118-119 and concept articulation, 35 and correctness conditions, 28-30, Dennett, D., 67, 107, 113-114, 35-37, 41-42 118-119, 171n1, 171n3 and experimental philosophy, 29, Determination by reasons, 95–96, 172n4 Determined-or-Randomism (D-or-Rand intuitions, 29 and metaphysics (see Metaphysics, ism), 8-10

and conceptual analysis)

Determinism, 2-3, 6-7, 131-169	Facts of the matter. See Factual
a priori argument for, 135–137	emptiness
degrees of, 76–83	Factual emptiness, 23–24, 43, 56, 61–63,
as depressing, 105, 112, 125–126, 179n26	111, 159, 167, 169, 171n4, 179n25, 184n17
empirical arguments for, 141–165	Fairness. See Moral responsibility, and
FE-, 12–15, 18–20, 26–27	fairness
for-all-practical-purposes (see	Falk, A., 173n10
Determinism, virtual)	FE-determinism. See Determinism, FE-
hard, 3	FE-determinism question, the. See
macro-level, 142, 147-151	Question, FE-determinism, the
neural, 142, 151–154	Festinger, L., 163–164
soft, 3-4, 6, 25	Firing, neural, 153–154, 157
success-of-science argument for,	Fischer, J. M., 5, 6, 46, 54, 92, 171n1,
149–150	173n11, 173n12, 173n13, 173–
torn-decision, 142, 155–165	174n14, 174n1, 184n16
universal, 142–147	Foley, R., 173n12
virtual, 11, 142, 149, 151-165	Folk meaning, 19, 23, 27–36, 41–42, 45,
Deterministic interpretations of	55–57, 59–61, 168, 172n4
quantum mechanics, 145–147, 182n7	For-all-practical-purposes determinism.
DeWitt, B., 182n8	See Determinism, virtual
Dignity, 36, 44, 61	Frankfurt, H., 5-6, 19, 22, 27, 46, 50,
Direct referentiality, 49, 173n9	53, 54, 65, 171n1, 172n3, 173n11,
Donagan, A., 67, 171n3	173–174n14
Double, R., 5, 46, 92, 114, 171n1,	Frankfurt-case argument, the, 50–51,
171n5, 173n11	173n14
Do-we-have-free-will question, the. See	Frankfurtian freedom. See Freedom,
Question, do-we-have-free-will, the	Frankfurtian
Dualism. See Mind-brain dualism	Freedom
Dworkin, G., 5, 46, 171n1, 173n11	Frankfurtian, 5-6, 19, 22, 27, 46,
	53–54, 65
Earman, J., 182n7	human-being, 48-49 (see also Analyses
Efforts of will, 70, 74, 179n23	of free will, and human-being
Ekstrom, L.W., 67, 171n3, 173n12,	freedom)
174n5, 177n16	Humean, 4-6, 16, 19, 22, 27, 34,
Eliminativist views of decisions, 71,	45–46, 50, 53–55, 65, 174n15
175n7, 175n8	libertarian (see L-freedom)
Empirical arguments for determinism,	moral responsibility, 42
141–165	ordinary-language, 116–117, 180n29
Event-causal libertarianism. See	varieties worth wanting (see Worth
Libertarianism, event-causal	wanting, the issue of)
Everett, H., III, 182n8	Freedom-enhancing indeterminism. See
Experimental philosophy, 29, 172n4	Indeterminism, freedom-enhancing

Free will. See also Freedom and intuitions (see Intuitions about free will) and the metaphysical component of the problem, 28, 53–54, 168 and the moral component of the problem, 28, 53 problem of, 1–15 and the semantic component of the problem, 28, 53 varieties worth wanting (see Worth wanting, the issue of)

Gallois, A., 173n12 Ginet, C., 12, 67, 68, 171n3, 173n12, 173–174n14, 178n22 Glannon, W., 173–174n14 Goetz, S., 67, 171n3 Greenspan, P. S., 173n12 Grotzinger, B., 159

Habits, 102 Hagan, S., 183n11 Haggard, P., 161, 183n12, 183n13 Haji, I., 92, 171n2, 173n11, 173-174n14 Hameroff, S. R., 135, 143, 155-159, 181n3, 183n11 Hard determinism. See Determinism, Hausman, D., 176n13 Hidden variables, 145-146, 148, 151, 154 Hiley, B. J., 146 Hobart, R. E., 6, 9-10, 12, 66, 171n1, Hobbes, T., 4, 6, 9-10, 12, 66, 171n1, 174n2 Hobbes-Hume-Hobart argument against libertarianism, 9-10 Hodgson, D., 156

Honderich, T., 143, 147-154, 183n9

Horgan, T., 173n12

Human-being freedom. *See* Freedom, human being; Analyses of free will, and human-being freedom
Hume, D., 4–6, 9–12, 16, 19, 22, 27, 33–34, 41–42, 45–46, 50, 52–55, 65–66, 137, 171n1, 172n3, 173n10, 174n15, 174n2
Humean freedom. *See* Freedom, Humean
Humean responsibility. *See* Moral responsibility, Humean

Identity theory. *See* Token–token identity theory; Type–type identity theory
Imprecision. *See* Analyses of free will, and imprecision
Incoherence. *See* Analyses of free will,

Hunt, D., 173-174n14

and incoherence Incompatibilism, 2, 9, 10–11, 13–14, 51–53, 55–62

Incompatibilist intuitions about free will, 57–58

Indeterminacy, 75–83, 171n4. *See also* Indeterminism

degrees of (see Degrees of indeterminacy and L-freedom)

freedom-enhancing, 96–106 (see also Libertarianism)

macro-level, 182n5 (see also
Determinism, macro-level)
moment-of-choice, 16, 21, 67, 75–76,
107–110, 132, 158–159 (see also
Libertarianism, non-Valerian)
prior-to-choice, 16, 67, 75–76,
107–110, 132, 158–159 (see also
Libertarianism, Valerian)

Indeterminism, 6–7, 131–169. See also Indeterminacy freedom-enhancing, 96–106 (see also

Libertarianism)

kind needed for libertarianism (see derivative, 123-124 Indeterminism, TDW-) partial, 78-83 no-freedom-enhancing (see as applied to persons, 121 FE-determinism) and the issue of what's worth TDW-, 75-83, 131-169 wanting, 106-113 Indeterministic interpretations of Libertarian freedom. See L-freedom quantum mechanics, 68, 145-147 Libertarianism, 10, 15-18, 65-130 Interpretations of quantum mechanics, agent-causal. See Agent causation 68, 145-147, 182n7 compatibilistic, 17-18, 55 Intuitions, use of, 29, 50-51, 89 event-causal, 16, 21, 67, 176n13 Intuitions about free will, 56-60 incompatibilistic, 18 Ion channels, opening and closing of, metaphysical, 17-18, 55 153 - 154moral responsibility argument for (see Isen, A., 163-164 Moral responsibility argument for libertarianism) noncausal, 16, 67, 176n13 James, W., 25 Johnson, D., 173n12 non-Valerian, 16, 21, 67, 75-76, 107-110, 113-114, 132, 174n5 Kane, R., 7, 15, 20, 67–70, 73–74, 83, semantic, 17-18 92, 99-100, 114, 123-124, 171n3, Valerian, 16, 67, 107-110, 113-114, 173n12, 173-174n14, 176n14, 132. 174n5 177n16, 178n22, 179n23 Libertarian responsibility. See Moral Kanean self-forming actions, 73-74 responsibility, libertarian Kant, I., 22, 25, 42-43, 137-141 Libet, B., 143, 155, 159-162, 183n12, Kantian argument for libertarianism. 183n13 Lincoln, A., 181n1 See Moral-responsibility argument for libertarianism Locke, J., 171n1 Kapitan, T., 171n1, 173n12 Luck objection to libertarianism, 13, 67, Kind-term analysis of 'free will', 37, 92-95

Kochen, S., 144
Kornhuber, H., 159

Lamb, J., 173n12, 173–174n14
Lateralized readiness potential, 183n12
Lehrer, K., 171n1, 173n10
Levin, P., 163–164
Lewis, D., 171n1, 173n12
L-freedom, 7–8, 10–11, 15–18, 65–130
as applied to decisions, 121–122
degrees of (*see* Degrees of indeterminacy and L-freedom)

Kind-term analysis of 'moral responsi-

48-50, 172n6

bility', 140-141

Macro-level determinism. See
Determinism, macro-level
Magnetic stimulation to the brain,
163–165
Malcolm, N., 181n4
Many-worlds interpretation of quantum mechanics, 145–146
Materialism. See Mind-brain materialism
McCall, S., 67, 171n3
McCann, H., 67, 171n3
McKay, T., 173n12
McKenna, M., 173–174n14

Meaning. See Folk meaning

Measurement, problem of, 145 responsibility'. See Kind-term Mele, A., 5, 46, 67, 92, 161, 171n1, analysis of 'moral responsibility' 171n3, 173n11, 173-174n14 Nelkin, D., 163 Metaphysical component of the Neural blips, 106–110 problem of free will. See Free will, Neural determinism. See Determinism, and the metaphysical component of neural Neural firing, 153-154, 157 the problem Neuroscience, 151-162 Metaphysical interestingness, 30-31 Metaphysical libertarianism. See Nichols, S., 29 Noncausal libertarianism. See Libertari-Libertarianism, metaphysical Metaphysical problems, 23-24, 168-169 anism. noncausal Metaphysics Nonrandomness. See Appropriate attacks on (see Antimetaphysicalism) nonrandomness and conceptual analysis, 25, 30-45 Nonspecificist views of decisions, 71, Microtubules, 155, 183n11 175n7, 175n8 Milgram, S., 163-164 Non-torn decisions. See Decisions, Mind-brain dualism, 16, 21, 67, 70, 109, non-torn 152 Non-Valerian libertarianism, See Mind-brain materialism, 3, 67, 70-71, Libertarianism, non-Valerian 85, 152, 183n9 Nozick, R., 67, 171n3 Moment-of-choice indeterminacy. See Libertarianism, non-Valerian O'Connor, T., 67, 92, 171n3, 173n12, Moral component of the problem of free will. See Free will, and the moral Ordinary language and analyses of free component of the problem will. See Analyses of free will, and Moral responsibility, 20, 22–23, 28, 36, ordinary language 39-44, 53-55, 62-63, 107-111, Ordinary-language freedom. See 137-141, 168 Freedom, ordinary-language and analyses of free will (see Analyses Ordinary-language meaning. See Folk of free will, and moral responsibility) meaning and fairness, 41-42 Otsuka, M., 173-174n14 Humean, 41-42 libertarian, 41-42 Paradigm-case-term analysis of 'moral responsibility'. See Kind-term analy-Moral responsibility argument for libertarianism, 22, 42-43, 137-141 sis of 'moral responsibility' Moral responsibility question, the. See Parfit, D., 172n5 Question, moral responsibility, the Partial L-freedom. See L-freedom, partial Penrose, R., 135, 143, 155-159, 181n3 Nahmias, E., 29 Pereboom, D., 171n5, 173-174n14 Narveson, J., 173n12 Personal identity, 172n5 Nathan, N., 173n12 Phenomenology Natural-kind-term analysis of 'free will'. argument from, 89-91 See Kind-term analysis of 'free will' and torn decisions, 73, 75 Natural-kind-term analysis of 'moral Plural authorship, 7, 83, 119

Plural control, 7, 83, 119 Randomness, non-. See Appropriate Plural rationality, 7, 83, 119 nonrandomness Rationality, 7, 83, 113-119. See also Pretheoretic beliefs, 139-141 Prigogine, I., 182n5 Plural rationality Prior-to-choice indeterminacy. See strong, 114-115 Libertarianism, Valerian teleological, 114-117 Probabilistic causation, 11, 16, 67, 80, weak. 114-117 Ravizza, M., 5, 6, 46, 54, 171n1, 104, 129, 176n13 Probabilistic laws, 68, 144-145, 150, 173n11, 173-174n14, 174n1, 153, 182n6 184n16 Problem of free will (defined), 1-15 Readiness potential, 159-162. See also Problem of measurement, See Measure-Lateralized readiness potential ment, problem of Reasons, determination by. See Determi-Psychology, arguments from, 163–165 nation by reasons Reasons responsiveness, 6, 54, 65, Quantum-computer view of the brain, 166-167 135, 155-159 Regress objection to libertarianism, 13, Quantum gravity, 155-156 67, 120 Quantum mechanics, 1, 6, 68, 135, Reid, T., 67, 171n3 143-147, 151, 154, 157 Responsibility. See Moral responsibility Rigidity, 49, 173n9 Ouestion Robb, D., 173-174n14 coherence, the, 36–39 compatibilism, the, 18-19, 25-28, Rowe, W., 67, 171n3 45-62 do-we-have-free-will, the, 18-19, 23, Sameness, 56-57 Sanford, D., 173n10 26-28, 30-45, 53 FE-determinism, the, 18-19, 26-27, 53 Self-forming actions. See Kanean libertarian, the, 20-22, 24, 27, 49-50, self-forming actions 54, 65-130, 166-168 Semantic component of the problem of free will. See Free will, and the moral responsibility, the, 20, 22–23, 28, 36, 39-44, 53-55, 62-63, semantic component of the problem 137-141, 168 Semantic libertarianism. See Libertarianwhat-is-free-will, the, 18-19, 22-23, ism, semantic 26-61, 168 Ship of Theseus, 56-57 Situationism, 54, 143, 163-164 which-kinds-of-freedom-are-compatible-with-determinism, the, 45-50 Slote, M., 173n12 which-kinds-of-freedom-do-we-have, Slowness of consciousness, 163 the, 19, 22, 27-28, 34-44, 53-54, 65, Smilansky, S., 171n5 165 - 167Soft determinism. See Determinism, soft Sources, people as, 92, 102, 107, 111 worth-wanting, the, 43-44 Specker, E. P., 144 Randomism. See Determined-or-Spin, 144-146 Randomism Spontaneous control, 98

Stapp, H., 135, 181n3
Statistical laws, 150, 153. See also
Probabilistic laws
Strawson, G., 92, 120, 171n5
Strawson, P. F., 5, 46, 171n1, 173n11
Strong rationality. See Rationality, strong
Stump, E., 173–174n14
Subconscious mental states and events, 71, 81, 86, 93, 101–104, 114–116
Success-of-science argument for determinism, 149–150
Superpositions, 144, 155–157
Synaptic transmission, 153–154, 157

Taylor, R., 67, 171n3 TDW-indeterminism. See Indeterminism, TDW-Tegmark, M., 143-144, 151-152, 155-159, 183n11 Teleological rationality. See Rationality, teleological Thorp, J., 67, 171n3 Token-token identity theory, 70-71, 85-89, 109, 152 Torn-decision determinism. See Determinism, torn-decision Torn decisions. See Decisions, torn Tuszyński, J. A., 183n11 Twain, M., 131, 181n1 Type-type identity theory, 70, 152

Universal determinism. *See* Determinism, universal

Valerian libertarianism. *See*Libertarianism, Valerian
van Inwagen, P., 20, 50–53, 92,
137–141, 171n3, 173n7, 173n12,
173n14, 174n5, 178n21
Velmans, M., 160, 163
Vihvelin, K., 171n1, 173n12
Virtual determinism. *See* Determinism, virtual

Wallace, R. J., 5, 46, 171n1, 173n11 Waller, B., 92 Walter, H., 160 Warfield, T., 173n12 Watson, G., 5, 46, 171n1, 173n11 Wave-function collapse, 144-146, 148, 155 - 157Weak rationality. See Rationality, weak Wegner, D. M., 163 What-is-free-will question, the. See Question, what-is-free-will, the Which-kinds-of-freedom-do-we-have question, the. See Question, which-kinds-of-freedom-do-we-have, the White, M., 173n10 Widerker, D., 173n12, 173-174n14 Wiggins, D., 67, 171n3 Wolf, S., 5, 46, 171n1, 173n11 Worth wanting, the issue of, 36, 39-44, 84, 105, 106–113, 119 and analyses of free will (see Analyses of free will, and the issue of what's worth wanting) Worth-wanting question, the. See

Zimmerman, D., 173-174n14

Wyma, K., 173-174n14

Question, worth-wanting, the