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Corresponding Author	Family Name	Ambrosino
	Particle	
	Given Name	Angela
	Suffix	
	Division/Department	Department of Economics and Statistics Cognetti de Martiis
	Organization/University	University of Turin
	City	Torino
	Country	Italy
	Email	angela.ambrosino@unito.it
Author	Family Name	Novarese
	Particle	
	Given Name	Marco
	Suffix	
	Division/Department	Dipartimento di Giurisprudenza, Scienze Politiche Economiche e Sociali
	Organization/University	Università del Piemonte Orientale
	City	Vercelli
	Country	Italy
	Email	mmarco.novarese@gmail.com

2 **Cognitive Law and Economics**

3 Angela Ambrosino¹ and Marco Novarese²
 4 ¹Department of Economics and Statistics Cognetti
 5 de Martiis, University of Turin, Torino, Italy
 6 ²Dipartimento di Giurisprudenza, Scienze
 7 Politiche Economiche e Sociali, Università del
 8 Piemonte Orientale, Vercelli, Italy

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9 **Definition** 

10 The tendency to consider the Behavioral Law and
 11 Economics and Cognitive Law and Economics as
 12 different sides of the same coin has been wide-
 13 spread inside the discipline. That was the conse-
 14 quence of a miscomprehension of what behavioral
 15 economics and cognitive economics are. These
 16 two research areas arise from a shared critique to
 17 standard neoclassical economics assumption of
 18 agents' perfect rationality and a common idea
 19 that economic agents, in the real world, are hetero-
 20 geneous and more cognitive complex than what
 21 the theory assumed, but soon they diverge pursu-
 22 ing different goals and partially applying different
 23 research tools. Particularly BL&E is more concerned
 24 with what agents do, while CL&E is more
 25 about how agents think.

26 Hence we need a proper discussion of what
 27 Cognitive Law and Economics is as well as we
 28 need a proper definition of Behavioral Law and
 29 Economics.

Introduction

30

31 Do we really need an autonomous definition for
 32 Cognitive Law and Economics or it is the same of
 33 Behavioral Law and Economics? The tendency to
 34 consider the two approaches as different sides of
 35 the same coin has been widespread inside the
 36 discipline. That was the consequence of a mis-
 37 comprehension of what behavioral economics and
 38 cognitive economics are. These two research areas
 39 arise from a shared critique to standard neoclassical
 40 economics assumption of agents' perfect rationality
 41 and a common idea that economic agents, in
 42 the real world, are heterogeneous and more cog-
 43 nitive complex than what the theory assumed, but
 44 soon they diverge pursuing different goals and
 45 partially applying different research tools. Hence
 46 we need a proper discussion of what Cognitive
 47 Law and Economics is as well as we need a proper
 48 definition of Behavioral Law and Economics.

49 Other entries in this encyclopedia show how
 50 and when law meets economics (see Law and
 51 Economics or Behavioral Law and Economics or
 52 Nudge or Financial Education). When law scholars
 53 started applying the insights offered by neo-
 54 classical economics to their inquiry, the aim of this
 55 new approach to law was to develop both a positive
 56 and a normative theory of law on which to
 57 build efficient legal norms. Law and economics
 58 (L&E) uses economic models and econometric
 59 tools to develop its research in two ways:

- 60 1. Pursuing efficiency: efficiency is considered
61 from two different points of view; on the one
62 hand, it means that common law (judge-made
63 law) is efficient, and on the other, from a nor-
64 mative point of view, it also means that law
65 must be efficient.
- 66 2. Its emphasis on incentives and people's res-
67 sponses to those incentives.

68 L&E has been widely criticized (Ellickson
69 1989) in that applying economic tools is not suf-
70 ficient to investigate the logic underlying the law
71 and that the reductionist approach of economics
72 cannot enable L&E to develop a proper positive
73 theory of law and it excludes any consideration
74 about justice.

75 L&E has been strongly influenced by the
76 changes and debates that have characterized the
77 development of economics since the middle of the
78 last century (Rachlinski 2000). In recent years, the
79 results obtained by the behavioral economics have
80 given new emphasis to the first criticisms brought
81 against law and economics. Behavioral econom-
82 ics shows that human behavior deviates from the
83 perfect rationality assumption, and these devia-
84 tions are not completely random, so it is possible
85 to model and predict human behavior when it is
86 affected by biases. During the 1990s, Jolls et al.
87 (1998) investigate the opportunities offered by
88 behavioral economics to develop a new approach
89 to law based on a more exhaustive theory of
90 human behavior whereby better understanding
91 of the foundations of individual behavior should
92 strengthen both the descriptive power of models
93 and their normative power. Their pioneering work
94 gives rise to Behavioral Law and Economics
95 (BL&E). During these same years, inside eco-
96 nomics is developing another important research
97 approach called cognitive economics (CI) (Bour-
98 gine and Nadal 2004). Cognitive economics shares
99 with the behavioral approach the idea that
100 human behavior is complex and that economic
101 theory must ground its theories on a better under-
102 standing of cognitive decision-making processes.
103 Cognitive economics retrieve the tradition of what
104 Sent (2004) define "Old Behavioral Economics"
105 that is the approach by Herbert Simon, instead that
106 Kahneman's.

Nevertheless, the two approaches follow (almost 107
partially) different paths of inquiry. Cognitive 108
economics puts itself in opposition to neoclassical 109
economics investigating economic problems as 110
complex phenomena. Its inquiry focuses on the 111
analysis of the micro-foundations of human 112
behavior and applies an interdisciplinary approach. 113
Cognitive economics strongly criticizes the 114
assumptions of standard economics and focus on 115
the complexity of decision-making processes of 116
heterogeneous agents. It questions the predictions 117
of standard economics models and the rigidity of 118
the formal tools applied. It is aimed at understand- 119
ing decision-making processes, but it differs from 120
behavioral economics, whose methodology is based 121
on the analysis of the effectively exhibited behav- 122
iors. Cognitive economics' central idea is that 123
each phenomenon can be investigated with differ- 124
ent tools and from different points of view. For 125
example, cognitive economics investigates inter- 126
dependent decisions using game theory not as a 127
formal tool to predict specific outcomes but as a 128
framework of analysis that allows investigating 129
the complexity of agents' decision-making pro- 130
cesses (Schelling 1960); the outcomes of the game 131
do not simply depend on strategies, but they are 132
strongly linked to social context, path dependence 133
dynamics, and focal points. Cognitive economics 134
focus on norms and institutions (Rizzello and 135
Turvani 2000, 2002), but while law and econom- 136
ics has been much influenced by behavioral eco- 137
nomics, the cognitive analysis of institutions has 138
not been considered until recently. 139

Ambrosino (2016) shows two main explana- 140
tions for this lack of interest in the cognitive 141
theory of institutions: 142

1. The different concept of norms underlying the 143
two research fields. 144
2. The cognitive theory of institutions is still far 145
from developing a normative theory, and it 146
focuses its inquiry on the positive level. 147

Nevertheless in the last few years, part of the 148
literature points out the relevance of the analysis 149
of the role of institutional forces and social norms 150
in constraining and coordinating heterogeneous 151

152 individuals, and cognitive economics and law and
 153 economics start to be connected and a new path of
 154 inquiry is arising.

155 The next sections are organized as follow: sec-
 156 tion “[Why Behavioral Law and Economics is not](#)
 157 [Cognitive Law and Economics](#)” explains why
 158 Cognitive Law and Economics (CL&E) is not
 159 the same as BL&E, particularly, “[Toward a Cog-](#)
 160 [nitive Approach to Law and Economics](#)” de-
 161 scribes the main feature of CL&E, and “[Main](#)
 162 [Critiques to Behavioral Law and Economics](#)”
 163 focuses on the main critiques that such approach
 164 moves to behavioral law and economics. Section
 165 “[Toward a Cognitive Law and Economics](#)
 166 [Inquiry](#)” provides an example of how CL&E con-
 167 tributes to the inquiry into law.

168 **Why Behavioral Law and Economics is**
 169 **not Cognitive Law and Economics**

170 **Toward a Cognitive Approach to Law and**
 171 **Economics**

172 The cognitive theory of institutions is grounded
 173 on the idea that it is not possible to investigate the
 174 rise and evolution of institutions without investi-
 175 gating individual decision-making processes
 176 (North 2005). The institutional and the individual
 177 levels of analysis are interconnected, so that an
 178 institutional change may be the starting point for
 179 modification of agents’ behavior, and new cog-
 180 nitive classifications or new routines of behavior
 181 can engender a slow process of institutional
 182 change (Hayek 1982; Hodgson 2004; Ambrosino
 183 2014). Cognitive theory of institutions assumes
 184 that agents are heterogeneous. Heterogeneity
 185 means that agents can exhibit different behaviors
 186 even if they belong to the same social and cultural
 187 context. That heterogeneity doesn’t prevent coordi-
 188 nation because agents are different, but they are
 189 made up of the same ingredients (Hayek 1982).
 190 Hence, they are able to understand each other, to
 191 build correct expectations about each other’s
 192 behavior, and to share common social norms.

193 Recently such research filed shows points of
 194 contact with that part of the legal theory that
 195 firmly critiques BL&E. Such connection opens
 196 the door to a proper cognitive approach to L&E.

197 Particularly, Gregory Mitchell’s main works 197
 198 seems to represent the main contribution to devel- 198
 199 oping inquiry into the “individual-institution” 199
 200 framework already described by the cognitive 200
 201 theory of institutions (Hodgson 2004; Ambrosino 201
 202 2014). Mitchell’s critique of BL&E “provides 202
 203 reasons why legal theory should refrain from 203
 204 broad statements about the manner in which all 204
 205 legal actors process information, make judgments 205
 206 and reach decisions and why others should be 206
 207 skeptical of such broad claims by the legal deci- 207
 208 sion theorists” (2002b, p. 33); “legal decision 208
 209 theorists should recognize the need for greater 209
 210 caution and precision in drawing of descriptive 210
 211 and prescriptive conclusions from empirical research 211
 212 on judgment and decision making” (2002b p. 32). 212
 213 Mitchell’s contribution is based on a strong belief 213
 214 in the utility of psychological and other empirical 214
 215 research for legal analysis. 215

216 It emerges a new approach to law that shares 216
 217 with cognitive institutional economics the idea 217
 218 that agents are heterogeneous and that simply 218
 219 introducing the existence of “standard” biases in 219
 220 modeling human behavior does not enable the 220
 221 development of efficient predictive models; the 221
 222 perfect rationality assumption is not an appropri- 222
 223 ate instrument with which to investigate agents’ 223
 224 behavior, and a proper theory of human behavior 224
 225 is needed. This approach suggests that the exist- 225
 226 ence of cognitive biases in legal contexts must be 226
 227 investigated in the field and with respect to spe- 227
 228 cific contexts through “social facts studies” 228
 229 (Mitchell et al. 2011): a social facts study applies 229
 230 different research methods to explain case- 230
 231 specific descriptive or causal claims, and it is 231
 232 focused on the context-specific features of the 232
 233 case at hand. The analysis of how agents should 233
 234 behave cannot be separated from the investigation 234
 235 of the specific social context and cultural and 235
 236 social relations. A multidisciplinary approach is 236
 237 necessary to develop better inquiry into the com- 237
 238 plexity of decision-making processes in legal con- 238
 239 texts. Legal theory, hence, moves toward a new 239
 240 approach, in which the cognitive determinants of 240
 241 agents’ behavior are investigated; it highlights the 241
 242 importance of (i) agents’ cognitive predisposi- 242
 243 tions, (ii) learning processes and the influence of 243
 244 past experience, and (iii) the role of context. 244

245 Moreover a cognitive inquiry into the diffusion of
 246 normative behavior and institutional change can
 247 furnish key into the opportunities offered by the
 248 development of prescriptive rules in shaping indi-
 249 vidual behavior. It emerges a new metacognitive
 250 approach to legal theory in which norms are con-
 251 crete instruments with which to induce agents to
 252 develop different ways of processing information.

253 CL&E, following a social facts analysis, shows
 254 how to build appropriate decision tools based on
 255 objective casual claims. Scientific research results
 256 can be applied to normative purposes. They
 257 should constitute a sort of “social authority”: an
 258 organizing principle for courts’ of legislator’ use
 259 of social science to create or modify a rule of law
 260 (Monahan et al. 2009). In the perspective of
 261 CL&E, social research and legal theory partially
 262 lose the need to furnish normative models. Pro-
 263 ducing case-specific evidence through reliable
 264 social science principles and methods, they be-
 265 come the research instruments that give judges
 266 and courts, and more generally the legislator, the
 267 information and the tools with which to evaluate
 268 and create new rules of law.


269 Main Critiques to Behavioral Law and 270 Economics

271 Part of the literature inside legal theory criticizes
 272 BL&E both under a theoretical and a methodo-
 273 logical point of view and points out relevant ele-
 274 ments of contact with cognitive economics that
 275 has opened the door to a new path of inquiry.

276 BL&E arise to pursue two main aims: first,
 277 explain why people do not act as they should in
 278 context of interest for legal theory (the benchmark
 279 being that agents should behave as the perfect
 280 rationality assumption expects), and second, bring
 281 people to act as they should proposing “a form of
 282 paternalism, libertarian in spirit, that should be
 283 acceptable to those who are firmly committed to
 284 freedom of choice on grounds of either autonomy
 285 or welfare” (Sunstein and Thaler 2003, p. 1160).

286 To pursue such aims, BL&E applies the tools
 287 and the insights furnished by behavioral eco-
 288 nomics. It is not surprising that BL&E today is
 289 exposed to quite the same critiques as behavioral
 290 economics (Ambrosino 2016).

291 The first critique to BL&E is strictly related to 291
 292 one of the cornerstone ideas inside B&E. It is a 292
 293 common opinion in B&E that it is possible to 293
 294 incorporate the complexity of the cognitive deter- 294
 295 minants of human behavior into the standard for- 295
 296 mal models of the neoclassical approach. The idea 296
 297 is that the assumption of perfect rationality can be 297
 298 replaced with a new concept of rationality – in 298
 299 which the existence of deviations from the perfect 299
 300 rationality assumption is explained by introducing 300
 301 new variables corresponding to particular biases 301
 302 assumed as commonly shared among agents – that 302
 303 better explains the complexity of real decision- 303
 304 making processes. Behavioral economics returns 304
 305 to being a research approach completely compat- 305
 306 ible with mainstream economics (Davis 2013). 306
 307 This tendency to build formal models has also 307
 308 taken place in the behavioral approach to L&E 308
 309 (Korobkin and Ulen 2000). The replacement of 309
 310 the perfect rationality assumption guarantees that 310
 311 BL&E models, compatible with the mainstream, 311
 312 produce strong normative outcomes. The first crit- 312
 313 icism to BL&E concerns the way in which 313
 314 scholars introduce into their inquiries insights 314
 315 drawn from the cognitive and psychosocial 315
 316 research of the past 30 years (Mitchell 2002a, 316
 317 2002b, 2003). L&E grounds its research on the 317
 318 evidence of the existence of cognitive biases in 318
 319 human behavior and argues that such biases are 319
 320 widespread in the population and are responsible 320
 321 for predictable and systematic errors (Korobkin 321
 322 and Ulen 2000). Nevertheless BL&E scholars fail 322
 323 in their attempt to criticize the perfect rationality 323
 324 assumption because they do not develop a new 324
 325 concept of rationality including the complexity 325
 326 of human decision-making processes. BL&E sub- 326
 327 stitutes the neoclassical assumption of perfect 327
 328 rationality with an assumption of “equal incom- 328
 329 petence” (Mitchell 2002a). This assumption is 329
 330 based on empirical research that shows homoge- 330
 331 neous behavioral tendencies among agents. 331
 332 BL&E uses these behavioral tendencies to com- 332
 333 pile a list of common deviations from rationality 333
 334 that characterizes the entire population, and it 334
 335 develops normative models prescribing how agents 335
 336 have to behave and how decision-makers should 336
 337 intervene to shape agents’ behavior and avoid 337
 338 their errors. B&LE overlooks the substantial 338

339 empirical evidence that people are not equally
 340 irrational and that human behavior is strongly
 341 influenced by situational variables: “The only
 342 way the lessons of behavioral decision research
 343 on bounded rationality can be manageably incor-
 344 porated into behavioral models for use in the law
 345 is if these lessons apply widely and uniformly. If
 346 the rationality of behavior depends on particular
 347 characteristics of the legal actor or on even just a
 348 few characteristics of the situation at hand, then
 349 the development of behavioral models that are
 350 both realistic and predictive becomes enormously
 351 complex” (Mitchell 2002a p. 83). CL&E argues
 352 that BL&E do not understand that heuristic pro-
 353 cessing is only one mode of thought and that
 354 agents often do not act as expected, and it suggests
 355 the need for a legal theory focused on finding
 356 solutions to specific problems rather than on
 357 developing a general model of legal behavior.
 358 Heuristics can lead to favorable solutions 
 359 many cases they can also give rise to errors.
 360 BL&E relies on the results obtained by behavioral
 361 research developed in other branches of economic
 362 theory and generalizes their significance. One of
 363 the main contributions is the pioneering work of
 364 Kahneman and Tversky (1974). These authors
 365 argue that their “studies on inductive reasoning
 366 have focused on systematic errors because they
 367 are diagnostic of the heuristics that generally gov-
 368 ern judgment and inference” (1974, p. 313). But
 369 this does not mean that the so-called K-T man can
 370 be reduced simply to the use of rules of thumb and
 371 heuristics in judgment. It seems an excessively
 372 simple explanation of human decision-making.
 373 “The likelihood that a particular decision or judg-
 374 ment will deviate from the ideal behavior derived
 375 from norms of rationality depends on a range of
 376 personal and situational factor. Even inside the
 377 relatively controlled environment of the labora-
 378 tory, we see considerable variation in cognitive
 379 performance among individuals depending on their
 380 cognitive abilities, educational background, and
 381 affective state” (Mitchell 2002a, p. 109). CL&E
 382 suggests legal theory should not seek a general
 383 model of judgment and decision-making, but it
 384 should develop a contextualist approach that seeks
 385 to identify the conditions under which irrational
 386 behavior occurs. BL&E has important norma-
 387 tive, methodological, and empirical limitations

388 that prevent it from achieving descriptive and 388
 389 predictive accuracy. The libertarian paternalism 389
 390 suggesting that planners can improve social wel- 390
 391 fare by setting default rules that create benefits for 391
 392 those who commit errors but cause little or no 392
 393 harm to those who are fully rational (Sunstein 393
 394 and Thaler 2003) assumes the pervasiveness of 394
 395 irrational tendencies but ignores less invasive 395
 396 forms of intervention that may help agents over- 396
 397 come their errors without altering the substantive 397
 398 rights of the parties (Mitchell 2005). BL&E des- 398
 399 cribing behavior as rational or irrational requires a 399
 400 normative standard against which the behavior 400
 401 may be judged (Mitchell 2003b). The behavioral 401
 402 approach assumes that rationality requires logical 402
 403 consistency and coherence in the formation and 403
 404 ordering of beliefs and preferences (Kahneman 404
 405 1994; Simon 1997). Rationality as coherence op- 405
 406 erates as a closed system. Individual defines goals 406
 407 and beliefs and behavior must be logically consis- 407
 408 tent and coherent with respect to those goals and 408
 409 beliefs. In the case of legal judgment, when evi- 409
 410 dence of an irrational judgment is found, many 410
 411 different explanations are possible, some of which 411
 412 make the irrationality of the decision questionable 412
 413 (Mitchell 2003b). A behavior in a particular con- 413
 414 text may be at the same time rational and irrational 414
 415 depending on the goals, the interpretation of the 415
 416 situation, and the tools used by any agent involved 416
 417 in the decision-making process. 417

418 The second main criticism concerns the meth- 418
 419 ods employed to test for cognitive biases and 419
 420 errors (Mitchell 2002b, 2003b). BL&E research 420
 421 underestimates situational and individual varia- 421
 422 tions in behavior and employs relatively weak 422
 423 tests of the hard-core assumptions of agents’ cog- 423
 424 nitive feature. The point is that the core of the 424
 425 research in heuristics and biases is based on sta- 425
 426 tistical significance tests on experimentally gener- 426
 427 ated and aggregate data. This body of research 427
 428 formulates in general terms the conditions under 428
 429 which events of various sorts occur and provides 429
 430 an interesting set of findings in general terms 430
 431 but with unspecified practical implications. Judg- 431
 432 ments are summarized by averaging across all the 432
 433 experimental subjects. That means that in BL&E 433
 434 analysis, if individual differences among judges 434
 435 emerge, these differences are treated as “errors,” 435
 436 and an “average judge” is considered the most 436

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437 meaningful summary of judges. This approach
 438 has the advantage of ensuring generalizability.
 439 Therefore, rather than examining individual vari-
 440 ation in judgment and choice, behavioral decision
 441 theorists typically assume that “to a first approxi-
 442 mation, the thought processes of most unin-
 443 stitutionalized adults are quite similar, and any
 444 variation in subjects’ responses is attributed to
 445 measurement error or random variance” (Mitchell
 446 2002b, p. 46). The rigor of experimental research
 447 is purchased at the price of generalizability of
 448 results, and this trade-off operates most directly
 449 in those fields that use laboratory experiments to
 450 study how humans navigate complex social envi-
 451 ronments like BL&E. Such critique is strongly
 452 related to the debate emerged in psychology
 453 about the danger of relying on “statistical signifi-
 454 cance” as a measure of behavioral tendencies.
 455 Scientists (and journals) publish studies and anal-
 456 yses that “work” and place those that do not in the
 457 file drawer (Rosenthal 1979). One answer to this
 458 problem of publication bias is that we can trust a
 459 result if it is supported by many different studies.
 460 But this argument breaks down if scientists
 461 exploit ambiguity in order to obtain statistically
 462 significant results (Simmons et al. 2011).

463 **Toward a Cognitive Law and Economics** 464 **Inquiry**

465 Hence Cognitive Law and Economics is aimed at
 466 developing a legal theory in which the peculiarity
 467 of decision-making in legal contexts can be really
 468 explained. The critique of the equal incompetence
 469 assumption suggests the need for a new analysis
 470 in which heterogeneous agents are considered
 471 (Mitchell 2002a, 2002b, 2003a, 2003b).

472 Evidence on cognitive biases must be investi-
 473 gated in legal contexts so as to build an original
 474 and consistent map of evidence. CL&E aspires to
 475 develop a contextualist approach. A contextual-
 476 ized approach acknowledges that features of the
 477 person, the situation, and the task have an impact
 478 on the nature and quality of judgment.

479 Experiments are only one of the tools that
 480 should be applied to examine variations in indi-
 481 vidual behavior. The need for an interdisciplinary

approach arises from the recognition that multiple 482
 forces combine to produce particular behaviors. 483
 The cognitive theory of institutions has yet devel- 484
 oped interesting inquiries into coordination pro- 485
 cesses (Schelling 1960) and into the relevance of 486
 learning in the process through which people con- 487
 form to social or formal rules. 488

More recently, an example of the kind of inquiry 489
 CL&E can develop is given by Mitchell 490
 (2009) idea of a metacognitive approach to regu- 491
 lation. Such approach is based on his discussion 492
 about the role of second-level thought in shaping 493
 human behavior. BL&E describes judgment as the 494
 product of a non-deliberative thought process 495
 based on cognitive heuristics and rules of thumb. 496
 Psychological models of actors developed inside 497
 BL&E show that biases in judgment and errors 498
 often arise at the level of first-order thoughts; 499
 thoughts occur at the direct level of cognition 500
 and are not intentional and not deliberative. 501
 These models assume that agents are incapable 502
 of going beyond these first-order thoughts and 503
 that this is the cause of irrational and discrimina- 504
 tory behavior. This emphasizes the role of auto- 505
 matic and intuitive thoughts while neglecting 506
 the role played by controlled and deliberative 507
 thoughts. It leaves no room for self-correction, 508
 arguing that individuals lack self-awareness of 509
 their biases, and it ignores the substantial evidence 510
 that agents learn through experience. Second 511
 thoughts may be the products of conscious effort, 512
 but they may also be automatic corrections work- 513
 ing at the unconscious level. The propensity to 514
 engage in self-correction varies among persons 515
 and situations, but all cognitively normal people 516
 are able to engage in some amount of “metacog- 517
 nition” about their own thoughts (Loires 1998). 518
 People may differ in their propensity for such 519
 reflection depending on their education, upbringing, 520
 values, or genetic endowment, but everyone 521
 possesses some level of ability in rethinking their 522
 own thoughts. 523

Regulation should take it into consideration. If 524
 second thoughts apply, law will not simply change 525
 the prices of different behaviors for the purposes 526
 of a rational analysis of the costs and benefits of 527
 different courses of action. Rather, law will focus 528
 on altering the ways in which agent processes 529

530 information. Under this point of view, law is a
 531 system of second thoughts that functions both
 532 consciously and unconsciously. Hence, law can
 533 contribute to influencing thoughts and behaviors
 534 in legal contexts. Mitchell provides concrete
 535 applications of his theory of law. The author
 536 (Monahan et al. 2009; Mitchell 2010; Mitchell
 537 et al. 2011) enters the debate on the proper scope
 538 of expert witness testimony that purports to sum-
 539 marize general social science evidence to provide
 540 context for the fact-finder to decide case-specific
 541 questions. Mitchell's analysis focuses on the
 542 *Dukes v. Wal-Mart* case on gender discrimination
 543 toward female employees. *Dukes'* plaintiffs sub-
 544 mitted expert statistical evidence showing that
 545 female employees were faring worse in the aggre-
 546 gate than male employees, and a report by a so-
 547 cial science expert identified a common source of
 548 this discrimination across all Wal-Mart facilities
 549 (Mitchell 2010, p. 136). The social science expert
 550 based his report on the "social framework anal-
 551 ysis" method (Fiske and Borgida 1999). This
 552 method consists in using social science research
 553 as a framework for analyzing the facts of a partic-
 554 ular case. The reliability of such analysis is based
 555 on the reliability of the research on which the
 556 general conclusions applied to the case at hand
 557 are based. In *Dukes v. Wal-Mart*, the expert sum-
 558 marized research on gender bias, organizational
 559 culture, and anti-discrimination measures and
 560 applied it to interpret the facts in the discovery
 561 material supporting the claims of the *Dukes* plain-
 562 tiffs. Mitchell argues that testimony based on that
 563 social framework analysis should be restrained
 564 from making any linkage between general social
 565 science research findings and specific case ques-
 566 tions. In the specific case of *Dukes v. Wal-Mart*,
 567 he based his critique on two main points: (1) in
 568 social framework analysis, experts use their per-
 569 sonal judgment rather than scientific method to
 570 link social science to specific cases; in some sense,
 571 social framework analysis make the same mistake
 572 that BL&E does in extending the experimental
 573 economics results to its research purposes without
 574 dealing with context-specific research. (2) The expert
 575 corroborated his report with statistical evidence.
 576 But the statistical evidence was itself subject
 577 to dispute with regard to the proper unit of anal-
 578 ysis. The plaintiffs argued for an aggregate-data

approach. This choice did not allow consideration 579
 of context-specific differences due to store-by- 580
 store variation in male-female outcomes and to 581
 local control over personnel matters. This use of 582
 statistical evidence is an example of how statisti- 583
 cal results can vary depending on the many deci- 584
 sions that researchers have to make while collect- 585
 ing and analyzing data (which outliers to exclude, 586
 which measures to analyze, and so on). Mitchell 587
 argues that there are social science techniques 588
 and methods that allow development of opinions 589
 about the parties or behaviors involved in a par- 590
 ticular case; such evidence has been referred to as 591
 "social facts" (Mitchell et al. 2011). Social facts 592
 are special types of adjudicative facts produced 593
 by applying social science techniques to case- 594
 specific data in order to help prove some issue in 595
 the case. A wide variety of social science methods 596
 can be used to produce social facts. The design of 597
 a social fact study depends on what a party hopes 598
 to learn. Mitchell divides the search for social 599
 facts according to three main goals: 600

1. Obtaining descriptive information: getting the 601
 facts right is important, but doing so can be 602
 difficult when the relevant facts are in the pos- 603
 session of a large number of nonparties. 604
2. Obtaining explanatory information: gain a bet- 605
 ter understanding of the issue in a case. Many 606
 research methods can be applied, such as inter- 607
 view, survey, observational study, and experi- 608
 mental simulation. 609
3. Testing specific hypotheses: the ideal way to 610
 test causal hypotheses is through the use of 611
 experiments in which participants' behaviors 612
 are recorded to assess how changes in the 613
 experimental conditions affect the behavior in 614
 question (Mitchell et al. 2011). 615

Social facts constructed by a proper scientific 616
 method possess scientific reliability and fit the 617
 facts of a particular case. Such reliability depends 618
 on the reliability of the scientific method applied. 619
 Mitchell shows that when addressing such a com- 620
 plex task as deciding a legal dispute, it is neces- 621
 sary to rely on rigorous interdisciplinary research 622
 tools that help prove some issue in the case. 623

CLE remains a very recent research project; 624
 its finding can be still considered a preliminary 625

626 attempt to develop a proper interdisciplinary in- 671
 627 quiry to law and economics. Moreover this ap- 672
 628 proach is still mainly focused on a positive ground. 673
 629 As shown in this section, CL&E is a very relevant 674
 630 and promising research field. 675

631 **Cross-References**

- 632 ▶ Behavioral law and economics
- 633 ▶ Law and Economics
- 634 ▶ Nudge

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635 **References**

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