

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

THE 'TEXTBOOK GIBSON': A CASE STUDY IN THE ASSIMILATION OF
DISSIDENCE.

THE 'TEXTBOOK GIBSON'

ABSTRACT

Ever since Kuhn's work on scientific revolutions, there has been growing recognition of the conservatism of 'normal science.' The introductory textbooks, as representatives of a discipline, aim to present a consensus, and hence are themselves a powerful force for non-change. This article is a case study in how the textbooks have dealt with one of psychology's most eminent dissidents, James Gibson (1904-1979). Our review of over a hundred textbooks, dating from the 1950s to the present, reveals fundamental and systematic misrepresentations of Gibson. Although Gibson continues to figure in most of the textbooks, his work is routinely assimilated to theoretical positions he had explicitly rejected: cue theory, stimulus-response psychology, and nativism. Furthermore, his work has come to be widely represented as a *complement* to traditional psychological theory. In short, this eminent dissident has, through a largely unconscious process of assimilation, been transformed into a reassuringly mainstream figure, the "Textbook Gibson".

Key words: James Gibson, ecological psychology, textbook science, normal science

1
2
3
4
5
6 The introductory textbook is in an obvious sense derivative, and far removed from the
7 main sites of scientific knowledge production. Furthermore, unlike much of the
8 'secondary literature,' such as literature reviews and advanced handbooks, the
9 general textbooks can hardly be expected to cover the relevant primary literature with
10 any consistent depth or expertise.
11

12
13
14
15 Nevertheless, despite its derivative status, the psychological textbook is highly
16 influential. It is likely to be the first contact students have with the topics covered in
17 their courses, and for those students who do not specialize in psychology (i.e. the
18 majority in the USA), the only psychological text they are likely to read or own. As
19 such, the introductory textbook serves as an important representative of psychology,
20 and not just to students, but also to the wider world.
21
22
23
24
25
26

27 The format of the textbook is itself highly potent. The order of the chapter headings
28 (which has remained largely unchanged over several decades) sends implicit yet
29 influential messages about what is supposed to be fundamental or 'hard' science, and
30 what, in contrast, is 'soft' and tentative. The chapters on sensory and physiological
31 psychology occur at the beginning, whereas social and 'applied psychology' (should
32 *that* appear at all) come somewhere towards the end. Even the style of writing and
33 choice of graphical representations can be highly persuasive about the
34 conclusiveness (or otherwise) of the findings and theories being reviewed (Smith,
35 Best, Stubbs, Bastiani & Roberson-Nay, 2002; Smith, Best, Stubbs, Johnston &
36 Bastiani 2000; Smyth, 2001).
37
38
39
40
41
42
43
44

45 Clearly, given the range of different areas that the textbooks have to cover, there is
46 an inevitable risk of superficiality and inaccuracy, a problem compounded by the habit
47 of some textbook writers to recycle one another's material. (Kagan, 2006, pp. 66-68,
48 has provided an account of such plagiarism on an industrial scale.) However, there is
49 also the temptation or perhaps obligation to disregard or downplay important divisions
50 within the discipline. A consensus about the need for consensus seems to have been
51 established early within psychology (see Pillsbury, 1911, p. vii.). Misrepresentation by
52
53
54
55
56
57
58
59
60

THE 'TEXTBOOK GIBSON'

1
2
3
4 the textbook writers is thus not just a reflection of superficiality or carelessness, but
5 also motivated by a desire to convey a sense of shared disciplinary values and
6 agendas (Brush, 1974; Costa & Shimp, 2011; Lubek, 1993; see also Blumenthal,
7 1991). "Shadow history" (Watson, 1993) plays an important role here, where a
8 discipline recreates its history to conform to current ideals and concerns. Kuhn
9 (1963), who drew a sharp contrast between creative science and routine 'normal'
10 science, actually approved of such 'textbook' science, at least for the majority of
11 students destined to become 'normal' scientists (Kuhn, 1962, p. 20). However, as
12 Nersessian (2003) has demonstrated, 'textbook' science downplays the importance of
13 tacit knowledge and creativity even in normal science. "Much of the credit for the
14 success in creating practitioners goes to the apprenticeship ... during which practices
15 are learned in authentic situations" (Nersessian, 2003, p. 189).

16
17 If 'textbook' science is not merely misleading about normal science, how does it deal
18 with radical dissidence? As Kuhn (1962) famously argued, normal science is highly
19 resistant to revolutionary change. Psychology has had its fair share of notable
20 dissidents, such as David Bakan (1969), and Sigmund Koch (1999), but they are
21 seldom mentioned in the textbooks. One important dissident who could not easily be
22 ignored is B. F. Skinner,¹ and he has certainly been subject to "steady
23 misrepresentation" (see Todd & Morris, 1992). Skinner's relation to mainstream
24 psychology, however, is complicated. His immediate followers isolated themselves
25 within their own field of behavior analysis (Krantz, 1971, 1972; Coleman & Mehlman,
26 1992). Furthermore, Skinner was known within and beyond psychology mainly
27 through his popular writings, and these often contradicted the logic of his own theory
28 (see Costall, 1996; see also Scharff, 1982). We will be concerned with a more
29 centrally placed dissident, James Gibson (1904-1979).

JAMES GIBSON, AN EMINENT DISSIDENT

30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
Gibson's position in recent American psychology was almost unique. As Harry Levin,
Thomas Ryan, and Ulric Neisser explained in their Memorial Statement for Cornell
University, within the field of perceptual research he was "simultaneously its most
eminent and most dissident member" (cited in E. J. Gibson, 2002, p. 108). Gibson

1
2
3 remained a prominent figure within psychology throughout his long career. His early
4 experiments on memory for visual form (Gibson, 1929), on perceptual adaptation
5 (Gibson, 1933, 1937a & b) and on perceived orientation (Gibson & Mowrer, 1938),
6 were widely cited in the important publications of the time, including Koffka's
7 *Principles of Gestalt psychology* (1935) and Tolman's *Principles of purposive*
8 *behavior* (1932), and also in the handbooks of experimental psychology (Woodworth,
9 1938; Stevens, 1951; Osgood, 1953). His election to the prestigious Society of
10 Experimental Psychologists, in 1939, was the first of many of the highest honours in
11 American psychology that he received throughout the course of his long career (see
12 E. J. Gibson, 2002; Hochberg, 1994). Gibson's writings continue to be included in
13 compilations of classic contributions to psychological science, including the centenary
14 editions of the *Psychological Review* and *The British Journal of Psychology* (Gibson,
15 1954/1994; 1958/2009; Harré, 1981; Yantis, 2000).

16
17 By the 1940s, however, when he was already a prominent figure, Gibson came to have
18 serious doubts about the state of modern psychology. He was convinced that the traditional
19 atomistic and artificial approaches to the study of perception were fundamentally mistaken. All
20 of the existing theories presupposed that the available information was inherently limited or
21 ambiguous and hence required the perceiver to enrich it, or fill in the gaps. But, as Gibson
22 continued to maintain, the existing theories, empiricist, nativist, or rationalist, kept begging the
23 question by invoking prior knowledge in order to explain perception:
24
25

26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
Knowledge of the world cannot be explained by supposing that knowledge of the world
already exists. All forms of cognitive processing imply cognition to account for
cognition. (Gibson, 1979, p. 253).

59
60
Gibson's criticisms of perceptual theory had - and still have - much wider implications.
In the 1940s and 1950s, the domain of perceptual research was extensive.
Questions about the reliability of perception were closely connected with the concerns
of clinical and social psychologists. In particular, the topic of social stereotyping was
a pressing issue, in the light of the rise of fascism in Europe, and the purges of
suspected communists closer to home. These concerns are very evident in Gibson's
early writings (Gibson, 1939; 1953). His first book, *The perception of the visual world*,

THE 'TEXTBOOK GIBSON'

1
2
3 even makes reference to the Salem witch hunts (Gibson, 1950, p. 211). (Around this
4 time, Gibson was having his own experience of 'witch hunts.')

5 Although, the scope of
6 perceptual research has become much more restricted in more recent psychology,
7 Gibson's criticism of representationalist theories of perception nevertheless came to
8 have wider relevance once representationalism became the dominant mode of
9 theorizing within psychology in general.

10
11
12
13
14
15 Gibson regarded the problems in perceptual theory as reflecting the wider precarious
16 condition of psychology as a science:

17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
Psychologists are simply, on an absolute scale, dullards. ... They seem to feel,
many of them, that all we need to do is consolidate our scientific gains. Their
self-confidence astonishes me. For these gains seem to me puny, and scientific
psychology seems to me ill-founded. At any time the whole psychological
applecart might be upset. Let them beware! (Gibson, 1967, p. 142; see also
Gibson, 1985, p. 22).

In a review of Gibson's 1966 book, Edwin Boring, a leading figure in American
psychology, complained about "his many rude iconoclasms" (Boring, 1967, p. 154).
Nevertheless, far from rejecting Gibson's work, Boring came to the following glowing
conclusion:

Certainly, Gibson's volume is the most original work we have had in the field of
sense-perception for a long, long time. ... the details invite dissent, and the
progress of civilization depends, of course, on the interaction of dissents.
(Boring, 1967, p. 154.)

Historically, Gibson's status within psychology was indeed unique. On the one hand,
Gibson "'defied the crowd' more profoundly than any other psychologist of his
generation" (Neisser, 2002, p. 164). On the other hand, despite defying the crowd, he,
like Neisser, somehow remained a dissident *insider*.

GIBSON AND THE TEXTBOOKS

Over the years, we have been pointing out to one another the strange – sometimes,
very strange – things that the textbook writers have had to say about Gibson. For

1
2
3 some time, we regarded these misrepresentations as isolated aberrations, but
4 eventually came to notice a more consistent pattern. From that point on, we have
5 carefully examined every textbook we could obtain (118 in total, including successive
6 editions; for a full list of references, see Supplementary Materials).

7
8
9
10
11 The simplest way, of course, for the textbook writers to deal with dissident figures would be
12 simply to ignore them. In the case of Gibson, this has seldom happened: 94% of the
13 textbooks we have inspected refer to his work.¹

14
15
16
17 Another option would be to acknowledge his existence, but then immediately dismiss him, as
18 has sometimes been the case in the more specialized literature:

19
20
21 [Gibson] did for perception what Skinner did for animal learning: he
22 handicapped a generation of workers by his blinkered and oversimplified
23 approach. (Sutherland, 1989, p. 175)
24
25
26

27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

Outright dismissals of this kind are exceedingly rare in the introductory textbooks (but see Styles, 2005, p. 67). Gibson is consistently presented as offering an important alternative theoretical perspective, if one with a limited domain of validity. There are, however, two big problems. The first is the attribution to Gibson of theoretical positions that he himself emphatically rejected. The second is that the textbooks, almost without exception, fail to explain what was really distinctive about Gibson's alternative approach and, indeed, the *reasons* why he thought such an alternative was essential.

ASSIMILATING GIBSON TO THE MAINSTREAM

43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

The textbook writers have had great difficulty making sense of Gibson's alternative approach, and occasionally come up with their own very strange solutions. For example, in their account of Gibson's explanation of shape constancy, Philipchalk and McConnell (1994, p. 105) claim that Gibson thought that the eye itself corrected *optically* for perspectival foreshortening. Carlson, Martin and Buskist (2004, p. 189), in their discussion of Gibson's theory of affordances, argue that "some affordances may not be able to afford" (a curious proposal they unfortunately credit to Costall, 1995). The following account of Gibson must surely be the most unhelpful summary for students unfamiliar with his life's work:

THE 'TEXTBOOK GIBSON'

1
2
3 Gibson suggested that human beings can *not* be directly aware of their physical
4 worlds. ... The actual sensory inputs are often far too degraded to be able to
5 specify external scenes and objects ... (Taylor, 1999, pp. 588-589; emphasis
6 added).
7
8
9

10
11 Our concern is not with such idiosyncratic readings of Gibson, but with the remarkably
12 consistent way that most of the textbook writers have tried to make their own sense of
13 Gibson by assimilating his work to traditional theoretical schemes he had worked so
14 hard to undermine.
15
16
17

18
19 Before we go into detail, we will first note some general features of how the textbooks
20 deal with Gibson. Very few of the textbooks in their treatment of Gibson's approach to
21 perception include references beyond Gibson's own books, either supportive or critical.
22 He is usually treated as an essentially isolated figure. Furthermore, there are hardly
23 even any quotations from Gibson's own writings to support the claims made on his
24 behalf. Our concern, however, is with another consistent feature of the 'Textbook
25 Gibson', the striking similarities among different authors in *how* they mispresent
26 Gibson.
27
28
29
30
31
32
33

GIBSON, THE 'CUE THEORIST'

34
35
36 Throughout his work, Gibson was challenging the long established assumption that
37 perception is inevitably based upon unreliable "perceptual cues" which are only
38 *probabilistically* related to the world. In his early work, Gibson proposed that there
39 exist "higher-order variables" on the retina that are structured by the various surfaces
40 in the world, especially the *ground* surface, in such a way that these variables *specify*
41 properties of the world in a consistent and lawful way. According to Gibson, one of
42 the basic problems with "cue theories" was that, even though they are very effective
43 at explaining how perceivers make mistakes, they provide no coherent account of
44 perceptual *success*, such as a pilot smoothly landing an airplane. Cue theory
45 assumes that the information available is always inherently impoverished, so that
46 perceivers must resort to inferences in order to 'go beyond' the available information.
47 But, as Gibson argued, cue theory fails to explain the *source* of the additional
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 information that is supposed to support these inferences, since the *past* experience of
4 the individual - or the species - is, by the very terms of the theory, as precarious as
5 *present* experience.
6
7

8
9 As an alternative to cue theory, Gibson developed his so-called "Perceptual
10 Psychophysics", an explicit attempt to reinstate stimulus-response theory, by
11 redefining both the stimulus and response in a relational, non-atomistic way (see
12 Hochberg, 1957).
13
14
15

16
17 The textbook writers were quick to catch up with the appearance of Gibson's first
18 book, *The perception of the visual world* (Gibson, 1950), and their comments were
19 generally positive, and well informed (Hilgard, 1953, p. 310; Hebb, 1958, p. 199;
20 Krech & Crutchfield, 1958, p. 154). Krech and Crutchfield also rightly emphasize that
21 Gibson's "higher-order variables" of stimulation, such as texture gradients, constitute
22 an "adequate stimulus", in contrast to the unreliable cues of traditional theory, (Krech
23 & Crutchfield, 1958, pp. 153-154).
24
25
26
27
28

29
30 Hebb's 1958 textbook is one of the clearest in explaining the role of textured surfaces,
31 including the ground, in structuring the light available to perceivers. However, although Hebb
32 includes relevant figures from Gibson's first book, he gives no indication that this emphasis
33 upon surface texture was initiated by Gibson himself, or that Gibson was trying to provide a
34 serious alternative to *cue theory*. In fact, Hebb's textbook is one of the first to assimilate
35 Gibson's "higher-order variables" to traditional cue theory.
36
37
38
39

40
41 In fact, except when one is dealing with objects flying or floating in the air, all one's
42 judgments concern objects that are connected with (supported by) extended surfaces
43 such as the ground, walls of buildings, ceilings, and so on; and these background
44 surfaces have a most important influence on depth perception. As they extend away
45 from us, they show as gradients of *visual texture*, the units into which the surface is
46 divided .. and the irregularities within the units These provide *cues* to the
47 direction of slope of the surface, with respect to the line of vision, and thus provide
48 cues to the size and distance of objects close to or touching the surfaces (Fig, 68).
49 (Hebb, 1958, pp. 194-195; emphasis added)
50
51
52
53
54
55
56
57
58
59
60

THE 'TEXTBOOK GIBSON'

1
2
3 The textbook writers love lists, and one of the perennial lists - along with Piaget's
4 developmental stages - concerns the various "cues" to depth perception. Many textbooks,
5 even those that include no explicit account of Gibson's theory (e.g. Kimble & Garnezy,
6 1963; Levine, 2000), incorporate his proposed texture gradients and gradients of retinal flow
7 to their list of cues. Since the 1960s, the general line taken in the textbooks, either explicitly
8 or implicitly, is that Gibson was a cue theorist:
9
10
11
12
13

14 Gibson (1950, 1966) has done more than anyone else to emphasize the importance
15 of the physical *cues* in perceptual phenomena ... (Lindsay & Norman, 1977, pp. 52-
16 53; emphasis added)
17
18
19

20 Why is depth perception so easy? Clearly, a rich array of **depth cues**ⁱⁱ is
21 available to one or to both eyes - especially when we're moving about (Gibson,
22 1979). But how do we know how to interpret these **cues**? (Kassin, 2004, p.
23 114; see also Davey, 2004, p. 188)
24
25
26
27

28 Furthermore, as the following examples illustrate, even when the textbooks attempt to
29 explain how Gibson's approach differs from the standard accounts based upon inferences
30 from uncertain cues, they still go on to misrepresent him instead as a cue or inference-based
31 theorist, albeit a non-standard one:
32
33
34

35 The great nineteenth-century scientist Hermann von Helmholtz suggested that
36 many perceptual integrations reflect unconscious inference. ... More recent
37 investigators, notably James J. Gibson (1950, 1966), have pointed out that a
38 total stimulus pattern at any time usually contains enough information to make
39 these inferences or unconscious calculations. (Mussen & Rosenzweig, 1973,
40 p. 577).
41
42
43
44
45

46 ... Gibson explained depth perception in terms of *cues*, such as texture gradient and
47 motion parallax, picked up from optic flow. ... Whereas direct perception theorists
48 believe that these cues are picked up directly from the visual array, constructivists
49 would suggest that they are learned through past experience with objects around us.
50 (Cardwell, Clark & Meldrum, 2004 p. 232; emphasis added)
51
52
53
54
55
56
57
58
59
60

1
2
3
4 The following textbook manages to present Gibson as a cue theorist and yet also offering a
5 distinct alternative:
6

7
8 So far we have described the *cues* that allow the perceptual system to *infer* depth.
9
10 The fact that we are not aware of these inferences has led to the idea, which can be
11 traced back at least as far as Helmholtz before 1900, that *these inferences are*
12 *unconscious*. *Consistent with this view [sic]*, Gibson (e.g. 1950, 1986) claimed that
13 people *do not infer depth*, but rather perceive it directly. His idea is that ... perception
14 involves a direct sensitivity to higher-order invariants. (Medin, Ross, & Markman,
15 2001, p. 90; emphases added)
16
17
18
19

20
21 The attempt by Gleitman (1991) to assimilate Gibson to existing approaches lurches over
22 several pages. He first identifies Gibson as a standard cue theorist (pp. 202-203). Later,
23 however, he characterizes him as a nativist for rejecting *cues* in favour of "*higher-order*
24 *patterns of stimulation* to which the organism is *innately sensitive*" (p. 231; emphasis
25 added). Finally, Gleitman concedes that the situation is even more complicated since
26 Gibson's position "is not necessarily tied up with ... the nature-nurture issue" (p. 231-232)!

27
28
29
30
31 In short, there is a wide consensus among the textbooks (40%) that Gibson must
32 have been a cue theorist, and this includes the most recent textbooks. Even
33 textbooks presenting relatively sound accounts of Gibson's concept of direct
34 perception, nevertheless retain the language of cues: "According to Gibson we often
35 observe depth cues" (Sternberg, & Mio, 2009, p. 101). It is important to note that the
36 different misrepresentations of Gibson to be found in the textbooks are not mutually
37 exclusive. For example, the claim that Gibson emphasized "bottom-up perceptual
38 cues" (Bernstein, Penner, Clarke-Stewart, & Roy, 2008, p. 187) misrepresents him on
39 two counts, not only as a cue theorist but, as we will now explain, also as a bottom-up
40 theorist.
41
42
43
44
45
46
47
48

49 50 GIBSON, THE STIMULUS-RESPONSE OR BOTTOM-UP THEORIST

51
52 Gibson's early theory was a resolute attempt to develop a stimulus-response account of
53 perceiving without the need to invoke intervening processes of inference, computation,
54 construction, or representation. However, by the time of his second book, *The senses*
55 *considered as perceptual systems*, Gibson (1966) had come to regard stimulus-response
56
57
58
59
60

THE 'TEXTBOOK GIBSON'

1
2
3 thinking within psychology as fundamentally misguided. As he had already pointed out in his
4 first book, much of the variation in perceptual stimulation comes about because of our own
5 movements. We hardly ever remain still:
6
7

8
9 The normal human being, however, is *active*. ... If he is not walking or driving a
10 car or looking from a train or airplane, his ordinary adjustments of posture will
11 produce some change in the position of his eyes in space. Such changes will
12 modify the retinal images in a quite specific way. (Gibson, 1950, p. 117;
13 emphasis added)
14
15
16
17
18

19 Gibson's work on active touch (Gibson, 1962) nicely exemplifies his emphasis upon
20 the primacy of activity in perceiving in general: "The active senses ... are analogous
21 to tentacles and feelers" (Gibson, 1966, p. 5). Gibson could not have been more clear
22 about his rejection of S-R theory: "percepts are not responses to stimuli" (Gibson,
23 1975/1982, p. 411).
24
25
26
27

28 In his second book, Gibson (1966) redefined all of the senses functionally rather than
29 anatomically, as *active* interrelated organs of exploration, supported by a basic orienting
30 system. The perceptual systems, so defined, do not "receive" but "obtain" information.
31 Global optic flow, for example, is not a "stimulus", since it is brought about through our
32 moving around in the world. Gibson's rejection of stimulus-response thinking was thus a
33 fundamental departure not only from existing approaches to perception, but from the dualism
34 within much of psychological theory more generally, based, as it is, on a dualism of an active
35 mind versus a passive body (see Costall, 2006).
36
37
38
39
40
41
42

43 Several textbooks correctly explain Gibson's emphasis upon activity (e.g. Munn, Fernald, &
44 Fernald, 1969, p. 176; Buss, 1973, p. 158; Bruce & Green, 1985, p. 197). However, the
45 majority of the textbooks not only ignore Gibson's outright rejection of stimulus-response
46 theory, but also present him, instead, as the foremost proponent of such an approach in its
47 extreme, non-mediational, form. Gibson's theory is presented as essentially passive, as a
48 pure stimulus-response theory, or else, as in the more recent textbooks, as a "bottom-up
49 theory".
50
51
52
53
54
55
56
57
58
59
60

THE 'TEXTBOOK GIBSON'

1
2
3 An influential and controversial theorist ... is James Gibson (904-1980) [*sic*], whose
4 theory of **direct perception** truly defines the bottom-up approach. (Sternberg,
5 2003, p. 127)
6
7

8
9 The theories of Marr, Gibson and Selfridge are all what we call bottom-up theories
10 of perception. In other words, they explain perception by starting with the visual
11 stimulus and its effects on the nerve cell of the visual system and piecing it
12 together.' (Hayes, 1998, p. 31; see also, Stillings, Weisler, Chase, Feinstein,
13 Garfield, & Rissland, 1995, p. 464; Taylor, 1999, p. 588; Solso, 2001, p. 111;
14 Cardwell, Clark, & Meldrum, 2004, p. 217; Davey, 2004, p. 195; c.f. Eysenck &
15 Keane, 2000, p. 58)
16
17
18
19
20
21

22 The characterization of Gibson as an essentially passive theorist is not restricted to the
23 general textbooks. Successive editions of Richard Gregory's *Eye and brain* have
24 portrayed Gibson as a *passive* theorist. In fact, this text, which first appeared in 1966, is
25 the most likely source of this widespread misrepresentation of Gibson's theory. The
26 following passage comes from the fifth edition:
27
28
29
30

31 the kind of approach to vision which is developed in this book ... may be
32 called an *indirect* and *active* account. ... The alternative - that perceptions are
33 directly from the external world - was argued most strongly by the American
34 psychologist James J. Gibson (1904-1979), at Cornell University. ... Gibson's
35 essentially *passive* account is very different from the notion in this book, that
36 perceptions are constructed hypotheses. (Gregory, 1997, p. 9)
37
38
39
40
41

42 The misrepresentation of Gibson as a bottom-up theorist in the textbooks is
43 not only relatively extensive (23%) but is also to be found in the most recent
44 editions (e.g. Bernstein et al., 2008, p. 187). Gibson was neither a bottom-up
45 nor a top-down theorist. Given his emphasis upon the senses as active
46 systems of exploration, as "feelers", he was, if anything, a *bottom-down*
47 theorist.
48
49
50
51
52

GIBSON, THE NATIVIST THEORIST

THE 'TEXTBOOK GIBSON'

1
2
3 Both Eleanor and James Gibson were very dismissive of preformationist accounts of
4 perceptual development based on the concepts of preprogramming or hard-wiring. As
5 Eleanor Gibson put it, clearly the infant “must be equipped by nature with systems that make
6 detection of the information possible, but to call such structures rules or logic or computing
7 mechanisms sends one along the information processors' road of speculation, and not the
8 road of biology” (E. J. Gibson, 1985, p. 75; see also E. J. Gibson, 1999, p. 136, on Fodor's
9 nativism).

10
11
12 Both James and Eleanor Gibson rejected what they called “enrichment theories” either
13 based upon individual experience or innate knowledge. Instead, the Gibsons were arguing
14 that in a world rich in available information, the problem for the perceiver was not to “add”
15 something to insufficient cues, but rather to learn to differentiate between available
16 informative structures (J.J. Gibson & E.J. Gibson, 1955, pp. 33-4).

17
18
19 Several of the early textbooks include some discussion of the Gibsons' emphasis upon
20 perceptual learning. They also rightly explain that in rejecting “enrichment” theories of
21 learning, the Gibsons were *not* thereby committed to nativism. For the Gibsons, the extent to
22 which perception was unlearned was an open question, and “might be expected to
23 depend on the degree of maturity of the infant at birth, which in turn depends on his
24 species and on the kind of environment the young of his species have been
25 confronted with during evolution” (Gibson, 1966, pp. 266-267).

26
27
28 However, by the 1990s, the textbook writers had reached a wide consensus that James
29 Gibson must be a *nativist* (for exceptions see Best, 1989, pp. 102-103; Eysenck, 1993, p.
30 25; Gleitman, 1981, p. 248; Gleitman, 1983, pp. 159-160). As in the other cases of the
31 misinterpretation we have discussed so far, the textbooks present no quotations from
32 Gibson's work to support their claims, nor any arguments to justify them. The point is simply
33 asserted.

34
35
36 One version of ‘Gibson, the nativist theorist’ is based on the claim that he believed that
37 perceiving was primarily if not exclusively innate, in the sense of present at birth:

38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
*Gibson assumed that most perceptual learning has occurred during the
history of mankind, and so does not need to occur during the*

1
2
3 *individual's lifetime.* However, we have to learn which affordances will
4 satisfy particular goals, and we need to learn to attend to the
5 appropriate aspects of the visual environment. (Eysenck & Keane,
6 2000, p. 59; emphasis added.)
7

8
9
10 ... the Gestalt psychologists believed that perception was quite
11 automatic, requiring little learning. ... more recent theorists (e.g.
12 Gibson, 1979) also propose that *many* aspects of perception,
13 particularly the elements of depth perception called texture gradients,
14 are unlearned and automatic to all humans with normally functioning
15 visual systems. (Bell, Greene, Fisher, & Baum, 1996, pp. 70-71;
16 emphasis added; see also Davey, 2004, p. 303)
17
18
19
20
21
22

23
24 There is also wide agreement among the textbook writers that James Gibson was
25 indeed committed to nativism in the more specific theoretical sense that the role of
26 experience is assumed not to be formative, but merely supportive, triggering
27 preformed, hard-wired structures:
28
29

30
31 Gibson (1979) thought that in the real world sufficient contextual
32 information is usually available to make perceptual judgments, including
33 those regarding shapes. He believed that we use this contextual
34 information directly; in essence, we are prewired to respond to it.
35 (Sternberg, 1995, p. 170)
36
37
38

39
40 According to the theory of direct perception, both the understanding of
41 depth cues [sic] and the meaning of falling off a cliff are native
42 endowments of the human species. (Westen, 1996, p. 163.)
43
44
45

46 According to the **Gibsonian Approach**, your brain is "hard-wired" to
47 *see the world as it is.* ... Gibson believed there is a one-to-one
48 correspondence between sensory inputs and perceptual experiences,
49 and that this correspondence is determined by the genes. (Philipchalk,
50 & McConnell, 1994, p. 105; see also Simons, Irwin, & Drinnin, 1987, p.
51 126; (Dworetzky, 1988, p. 119; Maitland, 2010, p. 91.)
52
53
54
55
56
57
58
59
60

THE 'TEXTBOOK GIBSON'

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

As we have explained, Eleanor and James Gibson argued out that both the nativists and empiricists failed to explain the source of the prior knowledge that was supposed to supplement the available perceptual information. However, they had a further reason for rejecting the idea that perceiving and acting could be completely pre-programmed. Not only are our own bodies and action capacities subject to change over time, but also the situations we encounter never remain the same. Organisms therefore have to be flexibly attuned to the specific contingencies of any particular situation, something that no amount of preprogramming could ever achieve (see also Brooks, 1991; Reed, 1996; Shaw, 2003).

In several textbook accounts, this crucial point about the need for perceivers to be flexibly attuned to their specific situation is actually directed against Gibson, and deemed to place severe limits upon his own theoretical approach:

... Gibson's theory ... works best for innately programmed reactions to aspects of the natural environment, as when a bee finds its way back to the hive or a fish swims in water. ... The trouble with these kinds of interactions with the environment is that they are *stereotyped*. (Green, 1990, p. 518.)

[Gibson's approach] seems more suitable as an explanation of innately preprogrammed reactions to environmental circumstances. The visual array triggers stereotyped activity directly. A wasp buzzes against a closed window pane in reaction to a total visual environment. (Malim & Birch, 1998, p. 270-271; see also Taylor, 1999, p. 589-590.)

Bruce and Green's textbook on visual perception, first published in 1985, is the probable source of these later strikingly similar accounts. Yet Bruce and Green were *not* claiming that Gibson was a nativist, nor that his theory had no relevance to human perception. They were discussing his concept of affordances, and the role of conceptual knowledge in our understanding of things:

The Gibsonian concept of affordance ... is at its most powerful in the context of simple visually-guided behaviour such as that of insects. Here it does indeed make sense to speak of the animal detecting the information available in the

1
2
3 light which is needed to organise its activities, and the notion of conceptual
4 representation of the environment seems redundant.
5

6
7 For more intelligent creatures, and for people, we can make the same kind of
8 argument about detection of distance, falling-off places and so on in the
9 guidance of locomotion. (Bruce, & Green, 1985, p. 322; see also Bruce &
10 Green, 1990, p. 390).
11
12
13

14 Overall, a sizeable minority of the textbooks (26%) continue to misrepresent him as an
15 unqualified nativist, and sometimes in remarkably similar terms. This, however, is
16 mainly a development since the 1990s. The earlier textbooks do correctly present his
17 emphasis upon learning as the basis of perceptual differentiation.
18
19
20
21

22 THE 1979 GIBSON 23

24 In recent years, the textbooks have mainly taken Gibson's last book, *The ecological*
25 *approach to visual perception*, as the definitive statement of his theoretical position (Gibson,
26 1979). Yet, the main features of his final theory were already in place. He had already
27 rejected his early stimulus-response or "psychophysical" approach to perception, and
28 developed most of the concepts presented in the 1979 book (e.g. Gibson, 1966), such as
29 the senses as active perceptual systems, the optic array and optic flow, and visual
30 proprioception. Gibson described his last book as a "sequel" (Gibson, 1979, p. 1) to his first
31 book (Gibson, 1979), and, as such, it retains some of the same limitations: an exclusive
32 emphasis on vision, and an awkward switching between discussions of surface perception
33 and of the perception of 'meaning'. (In Gibson's first book, "direct perception", or what he
34 then called "literal perception" was restricted to the perception of surface characteristics.)
35
36
37
38
39
40
41
42
43

44 Perhaps, the most distinctive aspect of Gibson's last book was the concept of "affordances"
45 – the meanings of things for our actions.ⁱⁱⁱ Gibson's account of affordances involves two
46 claims. The first is that such meanings can be "directly perceived": that there is information
47 available that specifies the affordances of things. Gibson regarded this first claim as the
48 most important, even though it clearly presupposes a second, more fundamental, claim: that
49 affordances *exist* in the world, although in relation to the animal in question:
50
51
52
53
54
55
56
57
58
59
60

THE 'TEXTBOOK GIBSON'

1
2
3 The *affordances* of the environment are what it *offers* the animal, what it
4 *provides* or *furnishes*, either for good or ill. [...] I mean by it something
5 that refers to both the environment and the animal in a way that no
6 existing term does. It implies the complementarity of the animal and the
7 environment." (Gibson 1979, p. 127.)
8
9

10
11
12
13 The relational character of affordances is widely misunderstood as concerning
14 the animal *as a perceiver*, whereas, for Gibson, the relation ultimately
15 concerns the animal *as an agent*:
16
17

18
19
20 [Affordances] have unity relative to the *posture* and *behavior* of the
21 animal being considered. So an affordance cannot be measured as we
22 measure in physics. (Gibson 1979, pp. 127-128; emphasis added)
23
24

25
26 Putting meaning back into the world in this way was a fundamental move on Gibson's part,
27 and challenged a long tradition within Western thought that has placed meaning exclusively
28 within the realm of the mental, as a purely subjective quality.
29
30

31
32 Many of the recent textbooks make some reference to the concept of affordances, but
33 seldom mention or explore its deeper theoretical implications. Most of them approvingly
34 note that the concept reflects Gibson's "real-world" emphasis, and his insistence upon the
35 biological significance of perception as a basis for our activity and survival in the world, even
36 when they reject his basic theoretical approach (Styles, 2005, p. 67).
37
38

39
40 Many of the textbooks do discuss Gibson's claim that affordances can be directly perceived,
41 but then conclude that this claim is restricted to relatively simple activities, and must be
42 based on innate mechanisms, as in the various accounts about bees and birds that we have
43 already cited. None of the introductory textbooks seriously explains or critically examines the
44 wider philosophical implications of the concept of affordances as a challenge to dualistic
45 thinking within psychological theory (see Costall, 1995; Heft, 2001).
46
47
48
49
50

GIBSON AS A 'COMPLEMENTARY THEORIST'

51
52
53
54 This article has been concerned with how the textbooks deal with dissidence, and we chose
55 James Gibson as our case study since he was not only a dissident, challenging the
56 accepted foundations of psychological theory, but also remained widely respected within the
57
58
59
60

THE 'TEXTBOOK GIBSON'

1
2
3 discipline. For the best part of his long career, Gibson was trying to move beyond many of
4 the dualisms that continue to structure modern thought: mind vs body; subject vs. object;
5 person vs. world; and knower vs. known. His contributions were both critical and
6 constructive. He presented a fundamental critique of traditional psychological theory, but
7 also sought to develop a new theoretical approach that would overcome the standard
8 dualisms. Gibson regarded his new approach as having wider implications for psychological
9 theory: "The redefinition of perception implies a redefinition of the so-called higher mental
10 processes" (Gibson, 1979, p. 255).^{iv}

11
12 In an article on "Gibson's revolution," Neisser warned of the dangers of trying to assimilate
13 dissidents within psychology to existing schemes, and he had neither Gibson as the target
14 nor the textbook writers as the possible perpetrators solely in mind:
15
16

17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
Perhaps more than scientists in other fields, psychologists believe that there is
nothing new under the sun. ... Accustomed to this pattern, we try to understand each
"new" proposal by mapping it on to some existing scheme. When an idea is really
new, that strategy fails. (Neisser, 1990, p. 749)

As we have already seen, Gibson's work has been assimilated to probabilistic, inference-
based cue theory; stimulus-response and bottom-up theory; and the appeal to 'hard-wiring'
and the innate pre-programming of development.^v Ironically, despite his own warning about
assimilation, Neisser's influential *Cognition and reality* (1976) set the pattern for another
version of the 'Textbook Gibson', where Gibson's approach is presented as a complement to
traditional theory, rather than a radical alternative.

Neisser (1976, p. xii) did admit that his proposed synthesis was a matter of some "dismay" to
both James and Eleanor Gibson, but it has been enthusiastically taken up by the textbooks.
According to this synthesis, Gibson's direct perception is just a component of a more
inclusive "perceptual cycle" that also involves a constructivist component. Benjafield's
textbook (1997, p. 31) explicitly refers to Neisser's attempt at reconciliation: "Neisser
integrated information processing psychology with Gibson's theory of **direct visual
perception**," and even presents an account of Neisser's synthesis before going into the
details of Gibson's own approach (see also Best, 1989, p. 108; Davenport 1996, p. 233).

THE 'TEXTBOOK GIBSON'

1
2
3 Later, Neisser (1992) came to talk of two distinct modes of perception, the Gibsonian and
4 the constructivist, and the textbooks duly followed:
5
6

7
8 It is entirely possible, of course, that perceptual development involves both
9 differentiation and enrichment. Which process is used presumably depends on
10 the quality of stimulus information. Complex visual stimuli presented for a long
11 period of time in bright light require perceptual differentiation for accurate
12 perception, whereas visual stimuli presented very briefly in dim light need
13 perceptual enrichment. (Eysenck, 1993, p. 25; see also, Gross & McIlveen,
14 1998, p. 188; Gross, 1996, p. 217.)
15
16
17
18
19

20
21 While direct perception may help us in understanding some of the early
22 perception of sensory impressions, the constructive-perception theory is useful
23 in understanding how sensory impressions are comprehended by the thinking
24 brain. (Solso, 2001, p. 112.)
25
26
27
28

29 Most perception theorists (including Gregory, Marr, and Biederman) have
30 focused on perception for recognition, whereas Gibson emphasised perception
31 for action. (Eysenck & Keane, 2000, p. 62; see also Robinson-Riegler &
32 Robinson-Riegler, 2004, pp. 93-94)
33
34
35
36

37 There is now a wide consensus that Gibson's approach complements traditional
38 constructivist theory, and this is growing trend. As many as 35% of the textbooks we
39 have examined present Gibson not as a dissident but as a complement to mainstream
40 theory.
41
42
43
44

ASSIMILATING DISSIDENCE

45
46
47 Attempts at theoretical synthesis are not in themselves, of course, unreasonable. But,
48 in the case of dissident figures, such as Gibson, assimilation can be deeply misleading
49 about the nature of a discipline if the textbooks fail to set out the reasons why the
50 dissidents themselves were convinced (rightly or wrongly) that such reconciliation
51 *could* not work.
52
53
54
55
56
57
58
59
60

1
2
3 And this brings us to what we regard as the most important problem with the
4 'Textbook Gibson.' Not all the textbooks we have consulted are misleading in the
5 sense of including outright mistakes. Some of the accounts are careful and
6 informative. But the introductory textbooks are *selective* in the following sense. Just a
7 few of the textbooks do acknowledge that Gibson was "an influential and controversial
8 theorist" (Sternberg, 2009, p. 101), and that he regarded the constructivist approach
9 as "completely wrong headed" (Quinlan & Dyson, 2008, p. 215), but even these
10 textbooks do not provide any serious explanation of the reasons for Gibson's
11 challenge to mainstream psychology. The rest remain silent. In short, students
12 reading these texts are spared the disturbing details about *why* one of psychology's
13 most eminent figures had deep misgivings about the conceptual foundations of
14 psychology as a science. The "Textbook Gibson" is, therefore, an important example
15 of how disciplines can 'rehabilitate' their eminent dissidents by acknowledging their
16 existence, assimilating their work to existing schemas, and ignoring their dissidence.
17 This avoidance of controversy in the psychology textbooks would seem to go back a
18 long way in psychology: "Textbooks are not, of course, the place to discuss such
19 subjects" (de Laguna, 1918, p. 617).

20
21
22
23
24
25
26
27
28
29
30
31
32
33
34 William James was himself an early dissident, and also a crucial influence upon
35 Gibson (see Heft, 2001). His student textbook, *The briefer course*, begins with the
36 following reassurance, directed, no doubt, not so much at his student readers but at
37 their instructors:
38
39
40
41

42 In preparing the following abridgement of my larger work, the Principles of
43 Psychology, my chief aim has been to make it more directly available for class-
44 room use. ... I have left out all the polemical and historical matter, all the
45 metaphysical discussions and purely speculative passages, ... and (I trust) all
46 the impertinences of the larger work. (James, 1892, p. iii)

47
48
49
50
51
52 By the end of his textbook, William James could, however, no longer contain himself:

53
54
55 When, then, we talk of 'psychology as a natural science,' we must not assume
56 that that means a sort of psychology that stands at last on solid ground. It
57
58
59
60

THE 'TEXTBOOK GIBSON'

1
2
3 means just the reverse; it means a psychology particularly fragile, and into
4 which the waters of metaphysical criticism leak at every joint, a psychology all
5 of whose elementary assumptions and data must be reconsidered in wider
6 connections and translated into other terms. ... This is no science, it is only the
7 hope of a science. (James, 1892, p. 467-468).
8
9
10
11

CONCLUSION

12
13
14
15
16
17 In this article, we have been concerned with the assimilation of dissidence by the
18 textbook writers. We would like to end, therefore, with some advice to future
19 dissidents. In the light of the early precedent set by William James and the fate of the
20 "Textbook Gibson": (1) Write your *own* textbooks (if the publishers will let you!), and
21 (2) subvert the downright carelessness and intellectual cowardice of this well-
22 established scientific *genre*.
23
24
25
26
27
28
29

References:

30
31
32
33 Bakan, D. (1969). *On method: toward a reconstruction of psychological*
34 *investigation*. San Francisco: Jossey-Bass.
35
36

37
38 Bell, P., Green, T., Fisher, J., & Baum, A. (1996). *Environmental Psychology*. Fort
39 Worth: Harcourt Brace College Publishers.
40
41

42 Benjafield, J.G. (1997). *Cognition* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.

43
44 Bernstein, D.A., Penner, L. A., Clarke-Stewart, A., & Roy, E. J. (2008). *Psychology*.
45 Boston: Houghton-Mifflin.
46
47

48
49 Best, J.B. (1989). *Cognitive psychology* (2nd ed.). St. Paul, MN: West Publishing
50 Co.
51
52

53
54 Blumenthal, A. L. (1991). The introductory psychology textbook. *International Journal*
55 *of Social Education*, 5, 11-28.
56
57
58

1
2
3 Boring, E.G. (1967). Review of J.J. Gibson, The senses considered as perceptual
4 systems. *American Journal of Psychology*, 80, 150-154.
5

6
7
8 Brooks, R. A. (1991). Intelligence without representation. *Artificial Intelligence*, 47,
9 139–59.
10

11
12 Bruce, V., & Green, P. (1985). *Visual perception: Physiology, psychology and*
13 *ecology*. London & Hillsdale, NJ: Lawrence Erlbaum Associates.
14

15
16
17 Bruce, V., & Green, P. (1990). *Visual perception physiology, psychology and ecology*
18 (2nd ed.). Hillsdale: LEA Publishers.
19

20
21
22 Brush, S. G. (1974). Should the history of science be rated 'X'? *Science*, 183, 1164–
23 1172.
24

25
26
27 Buss, A. (1973). *Psychology: Man in perspective*. (Wiley International Edition) New
28 York: John Wiley & Sons, Inc.
29

30
31
32 Cardwell, M., Clark, L., & Meldrum, C. (2004). *Psychology for A2 level* (3rd ed.).
33 London: Harper Collins.
34

35
36
37 Carlson, N.R., Martin, G.N., & Buckist, W. (2004). *Psychology: European Edition* (2nd
38 ed.). Harlow: Pearson Education.
39

40
41
42 Coleman, S.R., & Mehlman, S.E. (1992). An empirical update (1969-1989) of D.L.
43 Krantz's thesis that the experimental analysis of behavior is isolated. *Behavior*
44 *Analyst*, 15, 43-49.
45

46
47
48 Costa, R. E., & Shimp, C. P. (2011). Methods Courses and Texts in Psychology:
49 "Textbook Science" and "Tourist Brochures." *Journal of Theoretical and Philosophical*
50 *Psychology*, 31(1), 25-43.
51
52

53
54
55 Costall, A. (1995). Socializing affordances. *Theory and Psychology*, 5, 467-481.
56
57
58
59
60

THE 'TEXTBOOK GIBSON'

1
2
3 Costall, A. (1996). Radical implications of B.F. Skinner's radical behaviorism. *Teorie*
4 *e Modelli, 1 (New Series)*, 5-14.

5
6
7
8 Costall, A. (2006). Introspectionism and the mythical origins of modern scientific
9
10 psychology. *Consciousness and Cognition, 15*, 634-654.

11
12 Costall, A. (2007). Bringing the body back to life: James Gibson's ecology of agency.
13 In J. Zlatev, T. Ziemke, R. Frank, & R. Dirven (Eds.), *Body, language and mind: Vol.*
14 *1: Embodiment* (pp. 241-270). The Hague: de Gruyter.

15
16
17
18 Davenport, G.C. (1996). *Essential psychology* (2nd ed.). London: Collins
19
20 Educational.

21
22
23
24 Davey, G. (Editor) Albery, I, Chandler, C. Field, A. Jones, D. Messer, D. Moore, S., &
25
26 Sterling, C. (2004). *Complete Psychology*. London: Hodder and Stoughton.

27
28
29 de Laguna, G.A. (1918). Dualism in animal psychology. *Journal of Philosophy,*
30
31 *Psychology and Scientific Methods, 15*, 617-627.

32
33
34 Dworetzky, J.P. (1988). *Psychology* (3rd ed.). St Paul: West Publishers.

35
36 Eysenck, M.W. (1993). *Principles of cognitive psychology*. Hillsdale, NJ: Erlbaum.

37
38 Eysenck, M.W., & Keane, M.T. (1990). *Cognitive psychology: A student's handbook*.
39
40 London: Erlbaum.

41
42
43 Eysenck, M.W., & Keane, M. (2000). *Cognitive psychology: A student's handbook*
44
45 (4th ed.). Hove, Sussex, UK: Psychology Press.

46
47
48 Gibson, E. J. (1985). Whosoever hath, to him shall be given. *New Ideas in*
49
50 *Psychology, 3*, 73-75.

1
2
3 Gibson, E. J. (1999). From EPAM to EGO: A cognitive journey. In E. Winograd, R.
4 Fivush, & W. Hirst (Eds.), *Ecological approaches to cognition: Essays in honor of*
5 *Ulric Neisser* (pp. 125-138). Mahwah, NJ: Lawrence Erlbaum.
6
7

8
9
10 Gibson, E. J. (2002). *Perceiving the affordances: A portrait of two psychologists.*
11
12 Mahwah, NJ: Lawrence Erlbaum Associates.

13
14
15 Gibson, E. J., & Gibson, J. J. (1934). Retention and the interpolated task. *American*
16
17 *Journal of Psychology*, 46, 603-610. REPEAT

18
19
20 Gibson, E. J., & Walk, R. D. (1960). The "visual cliff." *Scientific American*, 202, 64–71.

21
22 Gibson, J. J. (1929). The reproduction of visually perceived forms. *Journal of*
23
24 *Experimental Psychology*, 12, 1-39.

25
26
27 Gibson, J. J. (1933). Adaptation, after-effect, and contrast in the perception of curved
28
29 lines. *Journal of Experimental Psychology*, 16, 1-31.

30
31
32 Gibson, J. J. (1937a). Adaptation, after-effect, and contrast in the perception of
33
34 curved lines. II. Simultaneous contrast and the areal restriction of the after-effect.
35
36 *Journal of Experimental Psychology*, 20, 553-569.

37
38
39 Gibson, J. J. (1937b). Adaptation with negative after-effect. *Psychological Review*,
40
41 44, 222-244.

42
43
44 Gibson, J. J. (1939). The Aryan myth. *Journal of Educational Sociology*, 13, 164-71.

45
46
47 Gibson, J. J. (1950). *The perception of the visual world.* Houghton-Mifflin, Boston.

48
49
50 Gibson, J. J. (1953). Social perception and the psychology of perceptual learning. In
51
52 M. Sherif & M. O. Wilson (Eds.), *Group relations at the cross-roads* (pp. 120-138).

53
54
55
56
57
58
59
60
Harper & Brothers, New York.

THE 'TEXTBOOK GIBSON'

1
2
3 Gibson, J. J. (1954/1994). The visual perception of objective motion and subjective
4 movement. *Psychological Review*, 101, 318-323 [First published in the Psychological
5 Review, 61, 304-314.]
6
7

8
9
10 Gibson, J.J. (1958/2009) Visually controlled locomotion and visual orientation in
11 animals. *British Journal of Psychology*, 100, 259-271. [First published in the British
12 Journal of Psychology, 49, 182-194.]
13
14

15
16
17 Gibson, J. J. (1962). Observations on active touch. *Psychological Review*, 69, 477–
18 91.
19

20
21
22 Gibson, J. J. (1966). *The senses considered as perceptual systems*. Boston:
23 Houghton-Mifflin.
24

25
26
27 Gibson, J. J. (1967). Autobiography. In E. G. Boring & G. Linzey (Eds.), *A history of*
28 *psychology in autobiography* (Vol. 5, pp. 127–43). New York: Appleton-Century-
29 Crofts.
30
31

32
33
34 Gibson, J. J. (1975/1982). Affordances and behavior. In E.S. Reed & R. Jones (Eds.),
35 *Reasons for realism: Selected essays of James J. Gibson* (pp. 410-411). Hillsdale,
36 NJ: Erlbaum.
37
38

39
40
41 Gibson, J. J. (1979). *The ecological approach to visual perception*. Boston: Houghton-
42 Mifflin.
43
44

45
46
47 Gibson, J. J. (1985). Perception: A one-hundred-year perspective. In S. Koch & D.E.
48 Leary (Eds.), *A Century of Psychology as Science* (pp. 224-230). New York: McGraw-
49 Hill.
50
51

52
53
54 Gibson, J. J. (1986). *The ecological approach to visual perception*. Hillsdale NJ: Lawrence
55 Erlbaum Associates.
56
57
58
59
60

- 1
2
3 Gibson, J. J., & Gibson, E. J. (1955). Perceptual learning: Differentiation or
4 enrichment? *Psychological Review*, 62, 32-41.
5
6
7
8 Gibson, J. J., & Mowrer, O. H. (1938). Determinants of the perceived vertical and
9 horizontal. *Psychological Review*, 45, 300-323.
10
11
12 Gleitman, H. (1981). *Psychology* (1st ed.). New York; W. W. North & Co.
13
14 Gleitman, H. (1983). *Basic psychology*. New York: W.W. Norton & Co.
15
16
17 Gleitman, H. (1991). *Psychology* (3rd ed.). New York: W.W. Norton & Co.
18
19
20 Green, J. (1990). Perception. In I. Roth (Ed.), *Introduction to psychology* (Vol. 2, pp.
21 475-527). Milton Keynes, UK: Open University Press.
22
23
24 Gregory, R. (1966). *Eye and brain: The psychology of seeing*. London: Weidenfeld
25 and Nicolson.
26
27
28
29 Gregory, R.L. (1997). *Eye and brain: The psychology of seeing* (5th ed.). Princeton,
30 NJ: Princeton University Press.
31
32
33
34 Gross, R. (1996). *Psychology: The science of mind and behaviour* (3rd ed.). London:
35 Hodder and Stoughton.
36
37
38
39 Gross, R., & McIlveen, R. (1998). *Psychology: A new introduction*. London: Hodder
40 and Stoughton.
41
42
43
44 Harré, R. (1981). *Great scientific experiments*. Oxford: Phaidon.
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

THE 'TEXTBOOK GIBSON'

1
2
3 Heft, H. (2001). *Ecological psychology in context: James Gibson, Roger Barker, and*
4 *the legacy of William James's radical empiricism*. Mahwah, NJ: Lawrence Erlbaum
5
6 Associates.

7
8
9
10 Hilgard, E.R. (1953). *Introduction to psychology*. New York: Harcourt Brace. X

11
12 Hilgard, E.R. (1962). *Introduction to psychology* (3rd. ed.). New York: Harcourt Brace.

13
14 Hochberg, J. (1957). The effects of the Gestalt revolution: The Cornell symposium.

15
16
17 *Psychological Review*, 64, 73-84.

18
19 Hochberg, J. (1994). James Jerome Gibson January 27, 1904 – December 11, 1979.

20
21
22 *Biographical Memoirs of the National Academy of Sciences*, 63, 150-171.

23
24 James, W. (1892). *Psychology: Briefer course*. London: Macmillan & Co.

25
26
27 Kagan, J. (2006). *An argument for mind*. New Haven, CT: Yale University Press.

28
29
30 Kassir, S. M. (2003). *Essentials of psychology*. Upper Saddle River, NJ: Pearson
31
32 Education.

33
34 Kimble, G. A., & Garnezy, N. (1963). *Principles of general psychology*. New York:
35
36 Ronald Press.

37
38
39 Koch, S. (1999). *Psychology in human context: Essays in dissidence and*
40
41 *reconstruction*. [Edited and with a preface by David Finkelman & Frank Kessel.]

42
43
44 Chicago: University of Chicago Press.

45
46 Koffka, K. (1935). *Principles of Gestalt psychology*. London: Kegan Paul, Trench,
47
48 Trubner & Co.

49
50 Krantz, D.L. (1971). The separate worlds of operant and non-operant psychology.

51
52
53 *Journal of Applied Behavior Analysis*, 4, 61-70.

1
2
3 Krantz, D.L. (1972). Schools and systems: The mutual isolation of operant and non-
4 operant psychology as a case study. *Journal of the History of the Behavioral*
5
6 *Sciences*, 8, 86-102.

7
8
9
10 Krech, D., & Crutchfield, R.S. (1958). *Elements of psychology*. New York: Alfred
11
12 Knopf.

13
14
15 Kuhn, T.S. (1962). *The structure of scientific revolutions*. Chicago: University of
16
17 Chicago Press.

18
19
20 Kuhn, T.S. (1963). The essential tension: Tradition and innovation in scientific
21
22 research. In C.W. Taylor & F. Barron (Eds.), *Scientific creativity* (pp. 341-354). New
23
24 York: Wiley.

25
26
27 Kuhn, T. S. (1968). Science I: the history of science. In D. L. Sills (Ed.). *International*
28
29 *encyclopedia of the social sciences* (Vol. 14, pp. 74–83). New York: Macmillan.

30
31
32 Levine, M.W., & Shefner, J.M. (2000). *Fundamentals of Sensation and Perception*.
33
34 Oxford: Oxford University Press.

35
36
37 Lindsay, P. H., & Norman, D.A. (1977). *Human information processing: An*
38
39 *introduction to psychology* (2nd ed.). New York: Academic Press.

40
41
42 Lubek, I. (1993). Social psychology textbooks: An historical and social psychological
43
44 analysis of conceptual filtering, consensus formation, career gatekeeping and
45
46 conservatism in science. In H.J. Stam, L.P. Mos, W. Thorngate, & B. Kaplan (Eds.),
47
48 *Recent trends in theoretical psychology*, Vol. 3. New York: Springer-Verlag.

49
50
51 Maitland, L. (2010). *5 Steps to a 5 AP Psychology, 2010-2011 Edition (5 Steps to a 5*
52
53 *on the Advanced Placement Examinations Series)*. New York: McGraw-Hill.

THE 'TEXTBOOK GIBSON'

1
2
3 Marr, D. (1982). *Vision: A computational investigation into the human representation*
4 *and processing of visual information*. New York: Freeman.

5
6
7
8 Malim, T., & Birch, A. (1998). *Introductory psychology*. London: Macmillan.

9
10
11 Medin, D.L., Ross, B.H., & Markman, A.B. (2001). *Cognitive psychology* (3rd ed.).
12 Fort Worth: Harcourt College Publishers.

13
14
15 Munn, N. L. (1966). *Introduction to psychology*. Boston: Houghton-Mifflin.

16
17
18 Munn, N. L., Fernald, Jr., L. D., & Fernald, P. S. (1969). *Basic psychology*. [An
19 adaptation of Introduction to Psychology, 2nd ed.] Boston: Houghton Mifflin.

20
21
22 Mussen, P., & Rosenzweig, M.R. (1973). *Psychology: An introduction*. Lexington,
23 MA: D.C. Heath & Co.

24
25
26
27 Neisser, U. (1976). *Cognition and reality*. New York: W.H. Freeman & Co.

28
29
30 Neisser, U. (1990). Gibson's revolution. *Contemporary Psychology*, 35, 749-750.

31
32
33
34 Neisser, U. (1992). Two themes in the study of cognition. In H. L. Pick, Jr., P. van
35 den Broek, & D. C. Knill (Eds.), *Cognition: Conceptual and methodological issues* (pp.
36 333-340). Washington, DC: American Psychological Association.

37
38
39
40
41 Neisser, U. (2002). Adventures in cognition: From *Cognitive Psychology* to *The Rising*
42 *Curve* (pp. 159-172). In R. J. Sternberg (Ed.), *Psychologists defying the crowd*.

43
44 Washington, DC: American Psychological Association.

45
46
47 Nersessian, N. J. (2003). Kuhn, conceptual change, and cognitive science. In T.

48
49 Nickles (Ed.), *Thomas Kuhn* (pp.178-211). Cambridge: Cambridge University Press.

50
51
52
53
54
55
56
57
58
59
60 Ornstein, R., & Carstensen, L. (1991). *Psychology: A study of human experience* (3rd
ed.). San Diego, CA: Harcourt Brace Jovanovich.

1
2
3 Osgood, C. E. (1953). *Method and theory in experimental psychology*. New York:
4
5 Oxford University Press.

6
7
8 Philipchalk, R.P., & McConnell, J.V. (1994). *Understanding human behavior* (8th ed.).
9
10 Fort Worth, TX: Harcourt Brace College Publishers.

11
12 Pillsbury, W.B. (1911). *The essentials of psychology*. New York: Macmillan.

13
14
15 Reed, E.S. (1996). *The necessity of experience*. New Haven, CT: Yale University
16
17 Press.

18
19
20 Quinlan, P., & Dyson, B. (2008). *Cognitive psychology*. Upper Saddle River, NJ:
21
22 Prentice Hall.

23
24 Robinson-Riegler, G., & Robinson-Riegler, B. (2004). *Cognitive psychology: Applying*
25
26 *the science of mind*. Boston: Pearson and AB.

27
28
29 Fivush & W. Hirst, (Eds.), *Ecological approaches to cognition: Essays in honor of*
30
31 *Ulrich Neisser* (pp. 3-30). Mahwah, NJ: Erlbaum.

32
33
34 Scharff, J. L. (1982). Skinner's concept of the operant: From necessitarian to
35
36 probabilistic causality. *Behaviorism*, 10, 45-54.

37
38
39 Shaw, R. E. (2003). The agent-environment interface: Simon's indirect or Gibson's
40
41 direct coupling. *Ecological Psychology*, 15, 37-106.

42
43
44 Simons, J.A., Irwin, D.B., & Drinnin, B.A. (1987). *Psychology: The search for*
45
46 *understanding*. St Paul: West Publishing Co.

47
48
49 Skinner, B.F. (1938). *The behavior of organisms: An experimental analysis*. New
50
51 York: Appleton-Century-Crofts.

52
53
54 Skinner, B.F. (1972). *Beyond freedom and dignity*. London: Jonathan Cape.

THE 'TEXTBOOK GIBSON'

- 1
2
3 Smith, L.D., Best, L.A., Stubbs, A., Bastiani A., & Roberson-Nay, R. (2002).
4
5 Constructing knowledge: the role of graphs and tables in hard and soft psychology.
6
7 *American Psychologist*, 57, 749-761.
8
9
10 Smith, L.D., Best, L.A., Stubbs, D.A., Johnston, J., & Bastiani, A. (2000). Scientific
11
12 graphs and the hierarchy of the sciences: A Latourian survey of inscription practices.
13
14 *Social Studies of Science*, 30, 73-94.
15
16
17 Smyth, M. (2001). Certainty and uncertainty sciences: Marking the boundaries of
18
19 psychology in introductory textbooks. *Social Studies of Science*, 31, 389-416.
20
21
22 Solso, R.L. (2001). *Cognitive Psychology* (6th ed.). Boston: Allyn and Bacon. x
23
24
25 Sternberg, R.J. (1995). *In search of the human mind*. Orlando, FL: Harcourt Brace
26
27 College Publishers.
28
29 Sternberg, R. J. (2003). *Cognitive psychology* (3rd ed.). Australia: Thomson
30
31 Wadsworth.
32
33
34 Sternberg, R. J., & Mio, J. (2008). *Cognitive Psychology*. (5th ed.) Florence, KY:
35
36 Wadsworth Cengage Learning.
37
38
39 Sternberg, R.J. & Mio, J. S. (2009) *Cognitive psychology*. Belmont, CA: Wadsworth.
40
41
42 Stevens, S.S. (1951). *Handbook of experimental psychology*. New York: Wiley.
43
44
45 Stillings, N.A., Weisler, S.E., Chase, C.H., Feinstein, M.H., Garfield, J.L., & Rissland,
46
47 E.L. (1995). *Cognitive science: An Introduction* (2nd ed.). Cambridge Mass: MIT
48
49 Press.
50
51
52 Styles, E. A. (2005). *Attention, perception and memory: An integrated introduction*.
53
54 Hove, UK: Psychology Press. 2005 or 2007 both dates are in text
55
56
57 Sutherland, S. (1989). *Macmillan dictionary of psychology*. London: Macmillan.
58
59
60

1
2
3 Taylor, Irene. (Ed.) (1999). *Active psychology: A and AS level*. London Longmans.
4
5 [Chapter on "perceptual processes" by Sharon Cheyne and Graham Davies, pp. 570-
6
7 607.]x
8
9

10 Todd, J. T., & Morris, E. K. (1992). Case studies in the great power of steady
11
12 misrepresentation. *American Psychologist*, 47, 1441-1453.
13
14

15 Tolman, E. C. (1932). *Purposive behavior in animals and men*. New York: The
16
17 Century Co.
18
19

20 Watson, R. S. (1993). Shadow history in philosophy. *Journal of the History of*
21
22 *Philosophy*, 31, 95-111.
23
24

25 Westen, D. (1996). *Psychology: Mind, brain and culture*. New York: John Wiley &
26
27 Sons.
28
29

30 Woodworth, R. S. (1938). *Experimental psychology*. New York: Henry Holt & Co.
31
32

33 Yantis, S. (2000). *Visual perception: Essential readings*. Hove, UK: Psychology
34
35 Press.
36
37
38
39

40 ⁱ There is no consistent pattern across successive editions of the same textbook
41 concerning whether James Gibson is included or not. The different editions of the
42 Hilgard textbook shift from sometimes extensive treatments of Gibson to no mention
43 at all. Eleanor Gibson, in contrast, is routinely cited in the textbooks, initially in relation
44 to her work on perceptual learning, and later in relation to her research on the visual
45 cliff (e.g. E. J. Gibson & Walk, 1960). Yet they seldom explain that James and
46 Eleanor Gibson were married, and also involved in a joint project.
47
48
49
50
51
52

53 ⁱⁱ Bold font in the original. This font is widely used in the textbooks to indicate key
54 terms.
55
56
57
58
59
60

THE 'TEXTBOOK GIBSON'

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

ⁱⁱⁱ In fact, Gibson had already introduced the concept of affordances in this second book (Gibson, 1966, pp. 273-274), and it is also anticipated in a remarkable chapter on “meaning” in his first book (Gibson, 1950, e.g. p. 198).

^{iv} Gibson also regarded his ecological approach as a conceptual contribution to the new environmental movement (Gibson, 1979, p. 2), but this concern has hardly been reflected in the subsequent research within ecological psychology.

^v On the face of it, the persistence and level of such misrepresentations within the introductory textbooks is puzzling. The introductory textbooks are now a dominant and lucrative aspect of psychological publishing, and there is extensive vetting of such products by teams of referees prior to publication. Furthermore, the textbooks, once published, are then subject to book reviews. In many cases, the textbooks go on to appear in several editions and so are open to later correction, and yet these misrepresentations are still repeated (or else, as we have seen, become increasingly garbled). Finally, it is surely odd that those teaching psychology courses do not themselves take more care to check the quality of the relatively expensive texts they are recommending to their students.