



Review: Sun, R. (2012). Grounding social sciences in cognitive sciences. Cambridge, Mass: MIT Press.

Journal:	<i>Philosophical Psychology</i>
Manuscript ID:	Draft
Manuscript Type:	Book Review
Keywords:	

SCHOLARONE™
Manuscripts

Preprint Only

1
2
3 Review: Sun, R. (2012). *Grounding social sciences in cognitive sciences*.
4 Cambridge, Mass: MIT Press.

5
6 Reviewer: Jeffrey White, KAIST, S.Korea drwhite@kaist.ac.kr
7

8
9 Readers of *Philosophical Psychology* may be most familiar with Ron Sun
10 by way of an article recently appearing in this journal on creative composition
11 expressed within his own hybrid computational intelligence model, CLARION
12 (Sun, 2013). That article represents nearly two decades' work in situated agency
13 stressing the importance of psychologically realistic architectures and processes
14 in the articulation of both functional, and reflectively informative, AI and agent-
15 level social-cultural simulations. Readers may be less familiar with Sun's 2001
16 "prolegomena" to related multi-agent (proto-social) research also from this
17 journal. That article argues that "a proper balance between "objective" social
18 reality and individual cognitive processes" is necessary in order to understand
19 "how individual belief systems... and the social/cultural belief system ... interact"
20 (Sun, 2001, pages 10 and 23). This issue remains central in Sun's 2012 edited
21 volume, *Grounding Social Sciences in the Cognitive Sciences*, here addressed from
22 within the expanding field of pioneering researchers bent on orchestrating that
23 proper balance, the "cognitive social sciences." Its fifteen chapters are sectioned
24 according to culture, politics, religion, and economics, and closes with an
25 especially rewarding pair of contributions from Gintis, and McCubbins and
26 Turner, under the heading of "unifying perspectives." Most entries – but for Sun's
27 own - are serviceably summarized in the introductory overview. So, rather than
28 follow suit, this review will focus on setting out Sun's vision, noting how this text
29 helps us to realize it more clearly, with a positive focus on a few entries in
30 particular.
31
32

33 Sun opens the book with a personal anecdote. Struck by the absence of
34 cognitive grounds for discourse while attending a social sciences conference in
35 2001 – the year of his "prolegomena" - he wondered at the possibility of
36 explaining "a substantial part of social processes and phenomena from a
37 cognitive-psychological point of view" (Sun, 2012, page 3). Initially confounded
38 by the "relative lack of interaction" amongst the pertinent disciplines (page 6),
39 by 2012 Sun is able to confidently maintain that this cognitive "grounding" is not
40 only possible, but necessary, holding that "any understanding of the impact of
41 culture on daily practice" ultimately arises from an understanding of "the
42 psychology of culture" (page 14). Then, he sketches this psychology of culture as
43 the upward and downward co-constitutive causal loops between cognitive
44 agents and the structures arising from their common function, a "two-way
45 interaction" with individuals influencing macro-level social structures, and
46 macro-level structures influencing individuals in very interesting ways (pages
47 18-23). Consistent with his original work in computational intelligence, Sun's
48 focus is the autonomous generation of concepts and their representations via the
49 ability to construct abstractions that then guide the behaviors of other similarly
50 embodied and embedded minds. He emphasizes the ontological significance of
51 this process, arguing that knowledge must be discovered before it can be shared,
52 and ultimately that societies and their institutions are actively produced by,
53 from, and for constitutive members who themselves are best understood as
54 enactive, variously mindful meaning-making machines coping, comporting, and
55
56
57
58
59
60

1
2
3 attuning together within and towards the world of their own co-creation
4 (whether or not they are aware of it). Relevant information and requisite
5 practices due resulting institutions are individually internalized, molding agent
6 psychology in the macro-to-micro direction, with these macro-level structures in
7 turn affected by individual “innate psychological propensities and prior learning
8 and experiences” as agents “gravitate toward those perspectives and biases
9 provided by culture” that reinforce said propensities and their ontological and
10 axiological commitments (page 20). With experience, agents can produce
11 actionable explanations for these processes, culminating in meta-level cognition
12 over present and emergent institutional arrangements and correlate
13 commitments (“*cognitive emergence*” or “*implicit-to-explicit explicitation*”) with
14 agents so informed able to “explicitly alter their behaviors to take account of
15 them” (page 21). Thus, the two-way interaction between agent and culture runs
16 from lowest to highest levels of organization and back again, and ultimately, with
17 the right conceptual tools, agent psychology is able to directly shape macro-level
18 arrangements, e.g. Thomas Jefferson and the Declaration of Independence.

19
20
21 The top-down reality of constructs generated bottom-up through
22 coordinated action is especially poignant given the chapter that follows, from
23 Paul Thagard. In “Mapping Minds across Cultures,” Thagard sets out from a
24 nested complex systems portrait of situated agency (“multilevel interacting
25 mechanisms” pages 38-41, reflecting Sun’s “levels of analysis” beginning page 6,
26 endorsed also by Pyysiainen on page 241, and a general notion recurring in
27 various ways throughout the collection) to demonstrate how a suitably refined
28 hybrid approach, such as that articulated in his HOTCO model, can begin to
29 explain the causal efficacy of social phenomena. This view is developed into
30 deceptively simple “cognitive-affective maps” constituted by representations and
31 their relations weighted by affect (positive or negative). He demonstrates how
32 these maps can make relationships between micro- and macro-level phenomena
33 explicit, and how behaviors might be changed on account of this information.
34 Finally, he follows Sun in affirming the necessary exposition of the cognitive
35 grounds of the sociological domain, judging that “much work in current social
36 science is dominated by two inadequate methodological approaches: the
37 methodological individualism ... of rational choice theory; and the
38 postmodernism ... in the form of vague discussions of discourse and power
39 relations” (page 56) As neither of these approaches reliably explain
40 psychologically realistic social agency at either level of organization, the
41 appointed role of cognitive social science becomes “how to integrate the social
42 and cognitive sciences non-reductively” (pages 56-7), a task that Thagard
43 fruitfully accomplishes with his cognitive-affective maps.

44
45
46
47 Following Thagard’s, each succeeding chapter in its own way works
48 toward a similar integration, coordinating insights into the cognitive bases for
49 social phenomena on the one hand with the social origins of cognitive
50 phenomena on the other. Each also actively corrects for disciplinary focal
51 aberrations as relevant disciplines are integrated, with some presenting
52 brilliantly resolved views over the emergent breadth of field (c.f. Atran, Thagard,
53 Gintis, N. Ross, Pyysiainen) and others offering ingenious avenues to similar
54 resolution (c.f. Shore, Kable, McArdle and Willis, D. Ross, Whitehouse, McCubbins
55 and Turner), with some openly challenging remaining resistance to these efforts.
56 For instance, Don Ross laments that economists have not adopted “the program
57
58
59
60

1
2
3 urged by Sun (2006) for combining cognitive with social modeling," a fact that he
4 finds "surprising" as "economists have devoted considerable attention to models
5 of individual people as disunified agents" while also presuming them to be
6 motivated "more by institutional structures and less by onboard computations"
7 (pages 297 and 308-9). And, McCubbins and Turner's chapter "Going Cognitive"
8 expresses frustration with disciplinary obstacles to the proper balance required
9 for adequate explanations of social-cognitive phenomena. These authors warn
10 that "social science modulo cognitive science seems to be self-contradictory and
11 unlikely to succeed" (page 410) lest the social scientist's "curse of knowledge" be
12 lifted (page 403) and disciplinary "framing effects" minimized (page 400) in
13 order "to include in the array of possible explanations for human behavior the
14 relevant mechanisms [and] heuristics from the cognitive science literature"
15 (page 397). This sentiment, that both perspectives are essential to anything that
16 might pass for an explanation of either, represents a binding assumption
17 common to every contribution to this volume. And, the promise of such an
18 approach to deliver in this regard is perhaps best demonstrated in Shore's
19 chapter, "Egocentric and Allocentric Perspective in Cultural Models," in which he
20 deftly underscores the role of both points of view in "the effective orientation of
21 individuals in their changing environments," facilitating "their ability to gain a
22 basic sense of internal coherence and personal meaning in their lives" (page
23 114). As lives - in their very living - are understood from both perspectives,
24 meaningful explanations must make both perspectives better understood.

25
26 Of course, such all-encompassing explanations are not easily
27 accomplished, and this difficulty suggests a neglected reason for the slow
28 integration of the social with the cognitive sciences. For instance, Sun's
29 philosophy of social cognition derives from Heidegger and Vygotsky,
30 phenomenological with sociological roots in Weber and Durkheim. As grounds
31 for social sciences, these are at once as solid and as open as can be easily
32 conceived. The trouble is that such integration from the cognitive sciences
33 represents a summit of interdisciplinarity, not an entry point. Scholars up to the
34 legwork are the exception rather than the rule, and those that try often proceed
35 via shortcuts through conventional wisdom and common fabrications that dull
36 the cutting edge and distract from focal phenomena rather than refine them (c.f.
37 the otherwise edifying section on politics). That said, *Grounding Social Sciences in*
38 *the Cognitive Sciences* is a dizzyingly informative collection, and due largely to a
39 few deeply inspired entries, a visionary resource-book representing what might
40 best be characterized as an emerging *post*-disciplinary understanding of the
41 human condition and its consequences. Central in this effort has been the editor,
42 Sun himself, and the breadth and caliber of this volume is testament to the
43 influence that this burgeoning study promises to have not only over how we
44 come to see ourselves and our societies, but how we aim to effect and affect them
45 either way. Without doubt, the cognitive social sciences will increasingly set out
46 the terms for meaningful explanations of human life, and their review by way of
47 this text is necessary reading for anyone so motivated. If it is not in your library,
48 already, then you may soon wish that it was. Highly recommended.

49
50
51
52
53
54
55
56 Works Cited
57
58
59
60

1
2
3 Sun, R. (2001). Cognitive science meets multi-agent systems: a prolegomenon,
4 *Philosophical Psychology*, 14:1, 5-28.
5

6 Sun, R. (2006). *Cognition and multi-agent interaction: From cognitive modeling to*
7 *social simulation*, Cambridge: Cambridge Univ. Press.
8

9
10 Sun, R. (2013) Autonomous generation of symbolic representations through
11 subsymbolic activities, *Philosophical Psychology*, 26:6, 888-912.
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

For Peer Review Only