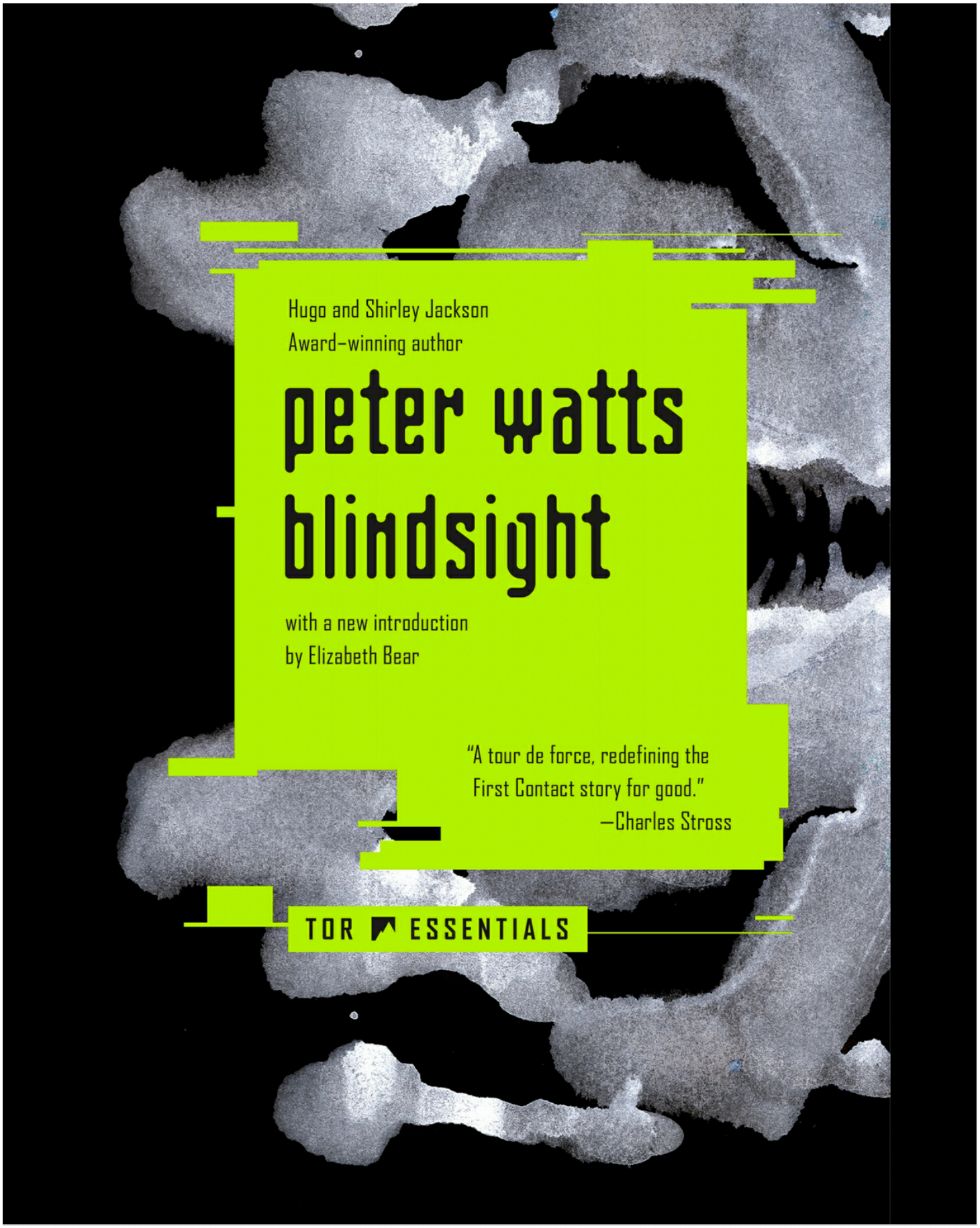

Hugo and Shirley Jackson
Award–winning author
peter watts
blindsight
with a new introduction
by Elizabeth Bear
"A tour de force, redefining the
First Contact story for good."
—Charles Stross
TOR ESSENTIALS

Blindsight is the Hugo Award–nominated novel by Peter Watts, "a hard science fiction writer through and through and one of the very best alive" (*The Globe and Mail).*

Two months have past since a myriad of alien objects clenched about the Earth, screaming as they burned. The heavens have been silent since—until a derelict space probe hears whispers from a distant comet. Something talks out there: but not to us. Who should we send to meet the alien, when the alien doesn't want to meet?

Send a linguist with multiple-personality disorder and a biologist so spliced with machinery that he can't feel his own flesh. Send a pacifist warrior and a vampire recalled from the grave by the voodoo of paleogenetics. Send a man with half his mind gone since childhood. Send them to the edge of the solar system, praying you can trust such freaks and monsters with the fate of a world. You fear they may be more alien than the thing they've been sent to find—but you'd give anything for that to be true, if you knew what was waiting for them. . . .

out with casual, unimaginable precision and tapped us on the nose with a laser beam.

This was not going to be an even match.

Szpindel spoke for all of us: "You knew that all along? You're telling us *now*?"

This time Sarasti's smile was wide and toothy. It was as though a gash had opened in the lower half of his face.

Maybe it was a predator thing. He just couldn't help playing with his food.

* * *

It wasn't so much the way they looked. The elongate limbs, the pale skin, the canines and the extended mandible—noticeable, yes, even alien, but not disturbing, not *frightening*. Not even the eyes, really. The eyes of dogs and cats shine in the darkness; we don't shiver at the sight.

Not the way they looked. The way they *moved*.

Something in the reflexes, maybe. The way they held their limbs: like mantis limbs, long jointed things you just *knew* could reach out and snatch you from right across the room, anytime they felt like it. When Sarasti looked at me—really *looked,* naked-eyed, unfiltered by the visor—a half-million years just melted away. The fact that he was extinct meant nothing. The fact that we'd come so far, grown strong enough to resurrect our own nightmares to serve us … meant nothing. The genes aren't fooled. They know what to fear.

Of course, you had to experience it in person. Robert Paglini knew the theory of vampires down to the molecules, but even with all those technical specs in his head he never really *got* it.

He called me, before we left. I hadn't been expecting it; ever since the roster had been announced our watches had blocked calls from anyone not explicitly contact-listed. I'd forgotten that Pag had been. We hadn't spoken since Chelsea. I'd given up on ever hearing from him again.

But there he was. "Pod-man." He smiled, a tentative overture.

"It's good to see you," I said, because that's what people said in similar situations.

"Yeah, well I saw your name in the noose. You've made it big, for a baseline."

"Not so big."

"Crap. You're the vanguard of the Human race. You're our first, last, and only hope against the unknown. Man, you *showed* them." He held his fist up and shook it, vicariously triumphant.

Showing them had become a cornerstone of Robert Paglino's life. He'd really made it work for him, too, overcome the handicap of a natural birth with retrofits and enhancements and sheer bloody-mindedness. In a world in which Humanity had become redundant in unprecedented numbers, we'd both retained the status of another age: *working professional*.

"So you're taking orders from a vamp," he said now. "Talk about fighting fire with fire."

"I guess it's practice. Until we run up against the real thing."

He laughed. I couldn't imagine why, but I smiled back anyway.

It *was* good to see him.

"So, what are they like?" Pag asked.

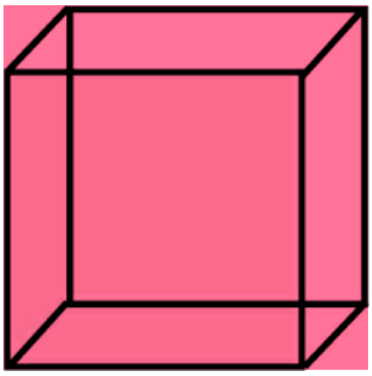
"Vampires? I don't know. Just met my first one yesterday."

"And?"

"Hard to read. Didn't even seem to be aware of his surroundings sometimes, he seemed to be … off in his own little world."

"He's aware, all right. Those things are so fast it's scary. You know they can hold both aspects of a Necker cube in their heads at the same time?"

The term rang a bell. I subtitled, and saw the thumbnail of a familiar wire-frame box:



Now I remembered; classic ambiguous illusion. Sometimes the shaded panel seemed to be in front, sometimes behind. The perspective flipped back and forth as you watched.

"You or I, we can only see it one way or the other," Pag said. "Vamps see it both ways *at once*. Do you have any *idea* what kind of an edge that gives 'em?"

"Not enough of one."

"*Touché*. But hey, not their fault neutral traits get fixed in small populations."

"I don't know if I'd call the Crucifix glitch *neutral*."

"It was at first. How many intersecting right angles do you see in nature?" He waved one dismissive hand. "Anyway, that's not the point. The point is they can do something that's neurologically impossible for us Humans. They can hold *simultaneous multiple worldviews,* Pod-man. They just *see* things we have to work out step-by-step, they don't have to *think* about it. You know, there isn't a single baseline Human who could just tell you, just off the top of their heads, every prime number between one and a billion? In the old days, only a few autistics could do shit like that."

"He never uses the past tense," I murmered.

"Huh? Oh, that." Pag nodded. "They never *experience* the past tense. It's just another thread to them. They don't remember stuff, they *relive* it."

"What, like a post-traumatic flashback?"

"Not so traumatic." He grimaced. "Not for *them,* at least."

"So this is obviously your current hot spot? Vampires?"

"Pod, vampires are the capital *H* hot spot for *anyone* with a 'neuro' in their CV. I'm just doing a couple of histology papers. Pattern-matching receptors, Mexican-hat arrays, reward/irrelevance filters. The eyes, basically."

"Right." I hesitated. "Those kind of throw you."

"No *shit*." Pag nodded knowingly. "That tap lucidum of theirs, that *shine*. Scary." He shook his head, impressed all over again at the recollection.

"You've never met one," I surmised.

"What, in the flesh? I'd give my left ball. Why?"

"It's not the shine. It's the"—I groped for a word that fit "—the *attitude,* maybe."

"Yeah," he said after a bit. "I guess sometimes you've just gotta be there, huh? Which is why I envy you, Pod-man."

"You shouldn't."

"I should. Even if you never meet whoever sent the 'Flies, you're in for one Christly research opportunity with that—Sarasti, is it?"

"Wasted on me. The only *neuro* in *my* file's under medical history."

He laughed. "Anyway, like I said, I just saw your name in the headlines and I figured, hey, the man's leaving in a couple of months, I should probably stop waiting around for *him* to call."

It had been over two years. "I didn't think I'd get through. I thought you'd shitlisted me."

"Nah. Never." He looked down, though, and fell silent.

"But you should have called her," he said at last.

BIG JUMP. NOT CONTIGUOUS WITH PREVIOUS SECTION. See page number circled below.

the pipes. Something that should have been straight and smooth but was somehow articulated instead. But not *one* of the pipes, I remembered: an *extra* pipe, an extra *something* anyway, something—

Boney.

That was crazy. There was nothing there. We were half a light-year from home, talking to unseen aliens about family reunions, and my eyes were playing tricks on me.

Have to talk to Szpindel about that, if it happened again.

* * *

A lull in the background chatter brought me back. Sascha had stopped talking. Darkened facets hung around her like a thundercloud. I pulled back the last thing she had sent: "We usually find our nephews with telescopes. They are hard as Hobblinites."

More calculated ambiguity. And *Hobblinites* wasn't even a *word*.

Imminent decisions reflected in her eyes. Sascha was poised at the edge of a precipice, gauging the depth of dark waters below.

"You haven't mentioned your father at all," *Rorschach* remarked.

"That's true, *Rorschach,*" Sascha admitted softly, taking a breath—

—and stepping forward.

"So why don't you just *suck my big fat hairy dick*?"

The drum fell instantly silent. Bates and Szpindel stared, open-mouthed. Sascha killed the channel and turned to face us, grinning so widely I thought the top of her head would fall off.

"Sascha," Bates breathed. "Are you *crazy*?"

"So what if I am? Doesn't matter to that thing. It doesn't have a *clue* what I'm saying."

"What?"

"It doesn't even have a clue what it's saying *back,*" she added.

"Wait a minute. You said—*Susan* said they weren't parrots. They knew the rules."

And there Susan was, melting to the fore: "I did, and they do. But pattern-matching doesn't equal comprehension."

Bates shook her head. "You're saying whatever we're talking to—it's not even intelligent?"

"Oh, it could be intelligent, certainly. But we're not *talking* to it in any meaningful sense."

"So what is it? Voice mail?"

"Actually," Szpindel said slowly, "I think they call it a *Chinese Room…*"

About bloody time, I thought.

* * *

I knew all about Chinese Rooms. I was one. I didn't even keep it a secret, I told anyone who was interested enough to ask.

In hindsight, sometimes that was a mistake.

"How can you possibly tell the rest of us what your bleeding edge is up to if you don't understand it yourself?" Chelsea demanded back when things were good between us. Before she got to know me.

I shrugged. "It's not my *job* to understand them. If I could, they wouldn't be very bleeding edge in the first place. I'm just a, you know, a conduit."

"Yeah, but how can you translate something if you *don't* understand it?"

A common cry, outside the field. People simply can't accept that patterns carry their own intelligence, quite apart from the semantic content that clings to their surfaces; if you manipulate the topology correctly, that content just comes along for the ride.

"You ever hear of the Chinese Room?" I asked.

She shook her head. "Only vaguely. Really old, right?"

"Hundred years at least. It's a fallacy really, it's an argument that supposedly puts the lie to Turing tests. You stick some guy in a closed room. Sheets with strange squiggles come in through a slot in the wall. He's got access to this huge database of squiggles just like it, and a bunch of rules to tell him how to put those squiggles together."

"Grammar," Chelsea said. "Syntax."

I nodded. "The point is, though, he doesn't have any idea what the squiggles *are,* or what information they might contain. He only knows that when he encounters squiggle *delta,* say, he's supposed to extract the fifth and sixth squiggles from file *theta* and put them together with another squiggle from *gamma*. So he builds this response string, puts it on the sheet, slides it back out the slot and takes a nap until the next iteration. Repeat until the remains of the horse are well and thoroughly beaten."

"So he's carrying on a conversation," Chelsea said. "In Chinese, I assume, or they would have called it the Spanish Inquisition."

"Exactly. Point being you can use basic pattern-matching algorithms to participate in a conversation *without having any idea what you're saying*. Depending on how good your rules are, you can pass a Turing test. You can be a wit and raconteur in a language you don't even speak."

"That's Synthesis?"

"Only the part that involves downscaling semiotic protocols. And only in principle. And I'm actually getting my input in Cantonese and replying in German, because I'm more of a conduit than a conversant. But you get the idea."

"How do you keep all the rules and protocols straight? There must be millions of them."

"It's like anything else. Once you learn the rules, you do it unconsciously. Like riding a bike, or pinging the noosphere. You don't actively think about the protocols at all, you just—*imagine* how your targets behave."

"Mmm." A subtle half-smile played at the corner of her mouth. "But—the argument's not really a fallacy then, is it? It's spot-on: You really *don't* understand Cantonese or German."

"The *system* understands. The whole Room, with all its parts. The guy who does the scribbling is just one component. You wouldn't expect a single neuron in your head to understand English, would you?"

"Sometimes one's all I can spare." Chelsea shook her head. She wasn't going to let it go. I could see her sorting questions in order of priority; I could see them getting increasingly … personal …

"To get back to the matter at hand," I said, preempting them all, "you were going to show me how to do that thing with the fingers…"

A wicked grin wiped the questions right off her face. "Oooh, that's *right*…"

It's risky, getting involved. Too many confounds. Every tool in the shed goes dull and rusty the moment you get entangled with the system you're observing.

Still serviceable in a pinch, though.

* * *

"It hides now," Sarasti said. "It's vulnerable now.

"Now we go in."

It wasn't news so much as review: We'd been straight-lining toward Ben for days now. But perhaps the Chinese Room hypothesis had strengthened his resolve. At any rate, with *Rorschach* in eclipse once more, we prepared to take intrusiveness to the next level.

Theseus was perpetually gravid; a generic probe incubated in her fabrication plant, its development arrested just short of birth in anticipation of unforeseen mission requirements. Sometime between briefings the Captain had brought it to parturition, customized for close contact and ground work. It burned down the well at high g a good ten hours before *Rorschach*'s next scheduled appearance, inserted itself into the rock stream, and went to sleep. If our calculations were in order, it would not be smashed by some errant piece of debris before it woke up again. If all went well, an intelligence that had precisely orchestrated a cast of millions would not notice one extra dancer on the floor. If we were just plain lucky, the myriad high-divers that happened to be line of sight at the time were not programmed as tattletales.

Acceptable risks. If we hadn't been up for them, we might as well have stayed home.

And so we waited: four optimized hybrids somewhere past the threshold of mere Humanity, one extinct predator who'd opted to command us instead of eating us alive. We waited for *Rorschach* to come back around the bend. The probe fell smoothly around the

NOT CONTIGUOUS WITH PREVIOUS SECTION. These are author's notes at the end of the book.

great apes and adult Humans are sentient, young Human children are not.[101] I admit to a certain fondness for this conclusion; if childen *aren't* nonsentient, they're certainly psychopathic).

But beneath the unthreatening, superficial question of what consciousness *is* floats the more functional question of what it's good for. It's telling to note that the nonconscious mind usually works so well on its own that it actually employs a gatekeeper to *prevent* the conscious self from interfering in daily operations.[102,103,104] (If the rest of your brain *were* conscious, it would probably regard you as the pointy-haired boss from *Dilbert*.) Sentience isn't even necessary to develop a "theory of mind": you don't need to be self-reflective in order to track *others*' intentions[97]. Norretranders declared outright that "Consciousness is a fraud."[105]

Aesthetics might be an exception. Aesthetics seem to require self-awareness—it might even be what got the whole sentience ball rolling in the first place. When music is so beautiful it makes you shiver, that's your limbic reward circuitry kicking in: the same circuitry that rewards you for fucking an attractive partner or gorging on sucrose.[106] It's a hack, in other words; your brain has learned to get the reward without actually earning it through increased fitness[88]. It feels good, and it fulfills us, and it makes life worth living. But it also turns us inward and distracts us. Those rats back in the sixties, the ones that learned to stimulate their own pleasure centers by pressing a lever: remember them? They pressed those levers with such addictive zeal that they forgot to eat. They starved to death. They died happy, but they *died,* without issue. Their fitness went to Zero.

Aesthetics. Sentience. Extinction.

Which brings us to one last question, lurking way down in the anoxic zone: the question of what consciousness *costs*. Compared to nonconscious processing, self-awareness is slow and expensive[102]. (The premise of a separate, faster "emergency brain" lurking at the base of our primary one is taken from studies by Joe LeDoux, and others.[107,108]) By way of comparison, consider the

complex, lightning-fast calculations of savantes; those abilities are noncognitive,[109] and they owe their superfunctionality not to any overarching integration of mental processes but to relative neurological *fragmentation*[5]. Even if sentient and nonsentient processes were equally efficient, the conscious awareness of visceral stimuli—by its very nature—distracts the individual from other threats and opportunities in its environment.[110]

But while many have described the various costs and drawbacks of sentience, few if any have taken the next step and wondered out loud if the whole damn thing isn't more trouble than it's worth. Of course it is, people assume; otherwise natural selection would have weeded it out long ago. And they're probably right. I hope they are. *Blindsight* is a thought experiment, a game of *Just suppose*. Nothing more.

On the other hand, the dodoes and the Steller sea cows could have used exactly the same argument to prove their own superiority, a thousand years ago: *If we're so unfit, why haven't we gone extinct?* Why? Because natural selection takes time, and luck plays a role. The game isn't over. The game is *never* over; and so, neither can there be any winners. There are only those who haven't yet lost.

Chimpanzees have a higher brain-to-body ratio than orangutans,[111] yet orangs consistently recognize themselves in mirrors while chimps do so only half the time.[112] Gorillas don't self-recognize at all. Similarly, those nonhuman species with the most sophisticated language skills are a variety of birds and monkeys—not the presumably "more sentient" great apes who are our closest relatives.[73,113] Such facts almost suggest that sentience itself could be a phase, something that orangutans haven't yet grown out of but which their more advanced chimpanzee cousins are beginning to.

Of course, we don't fit this pattern. If it even is a pattern. We're outliers: that's one of the points I'm making. I bet vampires would fit it, though.

And finally, some very timely experimental support for this unpleasant premise came out just as *Blindsight* was being copy edited: It turns out the

unconscious mind is better at making complex decisions than is the conscious mind[114]. The conscious mind just can't handle as many variables, apparently. Quoth one of the researchers: "At some point in our evolution, we started to make decisions consciously, and we're not very good at it."[115]

MISCELLANEOUS AMBIENCE (BACKGROUND DETAILS, BAD WIRING, AND THE HUMAN CONDITION)

Siri Keeton's radical hemispherectomy has been a common treatment for certain severe epilepsies for over fifty years.[116] The maternal-response opioids that Helen Keeton used to kick-start mother-love in her damaged son was inspired by recent work on attachment-deficit disorders in mice.[117] The multilingual speech patterns of *Theseus*'s crew were taken from Graddol, who suggests that a single "universal" scientific language would undesirably constrain the ways in which we view the world.[118]

The antecedent of Szpindel's and Cunningham's extended phenotypes exists today.[119] The spliced prosthetics that allow them to synesthetically perceive output from their lab equipment hails from the remarkable plasticity of the brain's sensory cortices: You can turn an auditory cortex into a visual one by simply splicing the optic nerve into the auditory pathways, if you do it early enough.[120,121] Bates's carboplatinum augments have their roots in the recent development of metal musculature.[122,123] I trawled the Gang of Four's linguistic jargon from a variety of sources.[73,124,125,126] Sascha's ironic denigration of TwenCen psychiatry hails from a pair of papers that strip the mystique from cases of so-called *multiple personality disorder.*[127,128]

I thought it would be cool to make one of the Gang a synesthete, reasoning that someone with cross-wired senses might have an advantage at deciphering the language of aliens with different sensory modalities; then, as I was putting *Blindsight* to bed, a paper appeared suggesting that synesthesias might be used to solve formal cognitive problems.[129] This validates me, and I wish it happened more often.[130]