

Chapter 9

Suspicious Minds: Allegra Goodman's *Intuition*

Allegra Goodman's novel *Intuition* (2006/2010) is set in the fictitious Philpott Institute in Boston, more precisely in a laboratory for biomedical research (run by Marion Mendelssohn and Sandy Glass) where a post-doc (Cliff Banneker) suddenly produces promising results, using a cancer-fighting virus named R-7. Preliminary outcomes lead to a publication in *Nature*, generating a lot of media attention and opening up new options for funding. The entire laboratory will from now on focus on follow-up research, but one of the other post-docs (Robin Decker, Cliff's former girlfriend) is unable to replicate the results and soon develops the "intuition" that the data may have been manipulated, although she does not have sufficient evidence to prove that she is right. The only evidence are some sloppy lab notes made by Cliff containing figures which seem to back up her suspicion that something is wrong. She opts for (or is manoeuvred into) the role of whistle-blower, however, and the *Office for Research Integrity in Science* (ORIS, an acronym/signifier which adds an S to ORI, the *Office of Research Integrity*) of the *National Institutes of Health* (NIH) concludes that there is indeed evidence of scientific misconduct, although this verdict is later annulled on procedural grounds. Meanwhile, a U.S. Senator uses the case to further his crusade against science, resulting in a media circus and a formal hearing. To make matters worse, the tumour recurs in some of the mice, while other labs also have problems replicating Cliff's results. As Lex Bouter (2015, p. 149) phrases it: "even on the last page, the reader is still not able to get to the bottom of what really happened", so that the novel "shows that there are many shades of grey along the spectrum that runs from complete integrity to research misconduct". On the individual level, the result is a struggle for survival, but most of the people involved seem able to find a way out, while manager Sandy Glass even manages to significantly improve his position.

9.1 Knowledge and Power

The Philpott Institute was open as usual. In the Mendelsohn-Glass lab, four postdocs and a couple of lab techs were working. Two to a bench, extracting DNA in solution, examining cells, washing cells with chemicals ... inserting new genetic material ... operating sinks with foot pedals, measuring and moving solutions milliliter by milliliter with pipettes ... preparing liquids, gels. There was scarcely an inch of counter space. Lab benches were covered with ruled notebooks and plastic trays... Glass beakers stood above on shelves, each beaker filled with red medium for growing cells (p. 3).

Philpott Institute is described from the beginning as a scientific “prison” (p. 20, p. 155). Researchers, notably post-docs, are expected to work long hours, almost continuously (24/7). The institute is depicted as a knowledge factory and scientific research as repetitive manual labour (or even as slavery) while any usable results of the post-docs’ hard labour is appropriated by the managers without further ado:

It occurred to [Cliff] now that he’d spent his whole adult life in a prison workshop. Years and years of manual labour went by. New results filtered through only on the rarest occasions... but Cliff and his friends kept on working. Like scientific sharecroppers, they slaved all day. They were too highly trained to stop. Overeducated for other work, they kept repeating their experiments. They kept trying to live on their seventeen-thousand-dollar salaries (p. 20).

There is a clear power divide running through the Mendelsohn-Glass lab between the powerless postdocs and lab techs on the one hand and the management on the other. The management consists of two persons, Marion Mendelsohn, who supervises the research, and Sandy Glass, who reports to higher level Directors and is responsible for the acquisition of research grants. The post-docs are expected to work on projects assigned to them by the managers and to produce results, which may serve as input for publications and grant applications (written by the managers, reaping the fruit of the post-docs’ labour). The lab’s morality is purely utilitarian and “Darwinian” (p. 17): the talent, intelligence and hard work of the post-docs hardly matters, as the managers are only interested in results.¹

The managers themselves dwell in a different kind of world, and this notably applies to Sandy Glass, a scientist who combines lab work with treating cancer patients and actually earns most of his income as a “VIP-ologist” (p. 17), treating wealthy patients (business tycoons, investment bankers, Saudi princes, etc.) suffering from cancer. The contrast between his lifeworld and the daily existence of his post-docs is quite striking. Sandy Glass is as a wealthy person, living in a grand Tudor house (with a “Rosewood piano”, a “precious library”, etc., p. 13). Colleagues hate him for his “egotism”, but he “thrives on the brine of their dislike” (p. 17). Every year, he invites his post-docs to his house for Christmas, where they experience his prosperity as “intimidating” (p. 13).

¹“Talent and intelligence, not to mention hard work, got lab scientists through the door, but – this was the dirty secret – you needed luck. You might be prepared and bright and diligent, and fail and fail and fail” (p. 18).

Sandy is a descendant from Eastern European Jews who changed his real name (Sam Glazeroff) “in the expectation that that will smooth his career path” (Miedema 2012, p. 75). While he represents the *science* dimension of contemporary elite culture, his wife (who is interested in Jewish history and is writing a book on invalid Victorian intellectuals entitled *Indisposed*) represents the *humanities* dimension. The latter also applies to his daughters, who are interested in science history² rather than in science, and in the poetry of John Donne. One of his daughters refers to the contingent of post-docs visiting the house as “lab rats” (p. 15).

Marion is not as wealthy as Sandy, but well-to-do. She and her husband Jacob are Jewish too. The latter was considered a genius in his youth, but dropped out of his career and now plays the violin. His reason for leaving research was that, at a certain point, he identified in himself a fatal inability. While he was able to master all the techniques, processes, methods and languages of laboratory life, even with amazing speed, there was one deficiency: he was not creative; he was not one of the chosen few. Therefore he gave up being a genius, thereby, “emasculating himself” as the novel phrases it (p. 30).

Gender and ethnicity of the main characters seem deliberately chosen. The lab is an ethnic mixture and compared to *The Affair* (Chap. 5), where women basically act as wives, the gender balance has now clearly shifted. In *Intuition*, women are both researchers (Robin) and managers (Marion). Moreover, again in contrast to *The Affair*, the ethnic division of roles has shifted as well. Whereas Cliff is at times affected by moods, a Chinese postdoc named Xiang Feng is depicted as being a completely impassive researcher, who lives solely for his work. Jews are no longer depicted as “other” as in *The Affair*, but rather as the scientific elite: as the managers, funders and publishers of research, while Cliff, the Anglo-Saxon male (the dominant ethnic group in *The Affair*) is now a minority.

The post-docs in the Mendelsohn-Glass lab are toiling academic Nibelung slaves, with Sandy Glass casted as their Alberich. Robin for instance spends 5 years of work on what once had been considered a dazzling project: screening enormous amounts of blood procured from cancer patients for promising biomarkers. But she failed to “spin Glass’s dross into gold” (p. 8). Xiang Feng grew up in China and “works constantly”, as a “self-deprecating”, scientific “ascetic” (p. 24). Much worse off than the post-docs, however, are the laboratory mice, living one floor down, in the animal facility: a room with a red glow, like a room in hell, where quivering pink mice are kept, drug addicted, sick by design, suffering from xenografts and from “grotesquely bulging tumours”. They are living tumours as it were (p. 23), creatures that are “sacrificed for the repetition of failed experiments” (p. 26). For indeed: instead of producing gold, the lab became stagnant and infertile. It is against this socio-cultural backdrop that the epistemological drama unfolds.

²Sandy (the scientist) seems insensitive to the humanities culture. When one of his daughters informs him that she wants to study the work of Robert Hooke, who invented the word *cell*, he fails to see why anyone should want “to read about discoveries instead of making them” (p. 54).

9.2 A Knowledge Production Crisis

At the start of the novel, Cliff (once considered a very talented postdoc) is in deep trouble. He had been the first person in his family to earn a Ph.D., and was hired by Mendelsohn and Glass as a highly promising researcher, but now he is “entirely in their power” (p. 5). For years he had been developing a variant of a Respiratory Syncytial Virus, dreaming of using his modified RSV to transform cancer cells into normal cells. But his experiments are not working. Sandy and Marion had ordered him to give up, but he had disobeyed. While trying to “cure cancer in a petri dish”, as Sandy cynically phrases it (p. 5), he had established nothing and was wasting expensive lab resources. Cliff had failed to produce results. He did not want to give up, however, because this would mean throwing away two and a half years of hard work. He could not bear to jettison a project that had taken so much of his time. The thousands of hours he had spent on it sickened him (p. 6). Moreover, he argued that he deserved “his own project”, but Marion is quick to point out “that here is no such thing as your own project” in this lab (p. 6).

Their dialogue entails a quite straightforward portrayal of university discourse:

S_2	a
S_1	$\$$

A qualified scientific researcher (S_2) should “by definition, be *impassive*” (p. 6, my italics), should not allow “emotions to govern his experiments” (p. 6). Yet, in his exposure to the (allegedly promising) Respiratory Syncytial Virus, he had allowed himself to be deceived by this alluring object, allowed himself to come under the sway of the modified virus (a in the upper-right position), desperately looking for an effect of this virus on mice, so that the “impassive” researcher became transformed into a craving subject ($\$$), obsessed by and addicted to an intractable object a . As the novel phrases it, “the gene you sought to isolate, the phenomenon you thought significant, could elude you; the trend and significant pattern of disease could evolve into an endless hell of ambiguities” (p. 18). This is exactly what had happened. In other words, the normal knowledge relationship has fallen victim to the matheme of desire ($\$ \diamond a$). This is why Cliff is so harshly criticised and reprimanded by the managers (representing his super-ego, the laboratory version of a parental couple as it were): Cliff has allowed himself to become emotionally involved. He has been “unrealistic” and “unprofessional”. Indeed: he is not a real (impassive) “scientist” (in the S_2 sense of the term), at least not according to the standards of Mendelsohn-Glass. He has not been a purely functional, replaceable and impassive laboratory agent (S_2), but rather someone who allowed himself to be fuelled by desire. For Mendelsohn and Glass, this is dangerous, destabilising and unacceptable.

Cliff’s despair is the inevitable by-product of laboratory life ($\$$ in the lower-right position), the inevitable result of his exposure to the allusive yet alluring object a . Or, as the novel phrases it, at a certain point “his despair seemed to melt and pool inside him, until ... he was no longer desperate, but simply demoralised and

depressed – emotions entirely accepted, even expected, in the lab” (p. 11). He clings to this project (he “knows” that it somehow *must* succeed), because the virus is his only chance to safeguard his prospects for a career in science. But the tension, the *Spaltung* between lab expectations (articulated by Sandy and Marion as his super-ego) and desire, are becoming unbearable. Therefore, Mendelsohn and Glass have decided to remove him from his project, to disconnect him from his object *a*:

S_2	a
S_1	$\$$

Cliff, the supposedly “impassive” agent (S_2 in the upper-left position), is driven by the relentless imperative “go on; continue to produce ore knowledge, never enough!” (S_1 in the lower-left position). As such, he becomes exposed to an object *a*, a “toxic” virus (in the psychoanalytical sense of the term), an inexorable something which not only ruins the health and well-being of his mice (who are infected with cancer cells on purpose), but is also increasingly becoming a threat to his own well-being, his own prospects of survival as a scientist, and even as a person (*a* in the upper right position: the focus of his intentionality, his interactions and his questions). The situation sickens and the whole laboratory is experienced as a sick environment, in a literal, but also in a figurative way. Cliff falls victim to a professional disease, the biomedical version of the *hysteria chemicorum* discussed above, and experiences a dramatic split between laboratory standards and his will to know, between the demands of knowledge production and his desire to discover a revelatory truth. Mendelsohn and Glass decide that Cliff must be replaced, for his epistemological affliction seems untreatable. He had been talented once, but in the Mendelsohn-Glass laboratory talent does not really matter. He failed to produce results, and Cliff fails to accept that “results filter through only on the rarest occasions”” (p. 20). He finds himself in a deadlock. The only option is to keep repeating his experiments (p. 20). But then something unexpected happens....

9.3 Intrusion of the Real or Fabrication?

At a certain point, Marion and Feng enter the animal facility to check the mice. Feng, who “rarely spoke while working” (p. 26), suddenly looks startled. He is inspecting a cage inhabited by mice that are used in Cliff’s virus experiments:

“Where is it?” Feng asked.

“Where is what?”

“The tumour,” he said.

She took the mouse herself ... the creature flexed its feet as Marion palpated the first set of mammary glands. The tumour was barely perceptible, scarcely protruding on the animal’s neck

“Now look at this one. Three-sixty-five”. Feng lifted another mouse from the cage. “This one last week had a tumour point seven centimetres in diameter. Where is it now?” (p. 26)

All of a sudden, the tumours seem to be shrinking. There seems to be a result. The experiment's object *a* is decidedly not the mouse, and it is no coincidence that the mice are furless, that their skin is nearly "transparent", for they actually are a "living library" (p. 25) of proteins and genes. The object *a* is a spectral something *inside* these animals, something which may have invaded these mice, something toxic or at least exceptional which temporarily cures them (from cancer), but eventually kills them, because the mice are merely a kind of living stage, allowing the viral drama to unfold, and bound to be sacrificed in order to study the impact. The mice are merely vehicles or ecosystems: the object *a* is a particular type of virus (labelled R-7), the frustrating, enigmatic target which now suddenly seems to live up to its promises and expectations, for there is something missing in the mice, a disconcerting but at the same time promising abnormality or gap: the tumour has decreased. Marion and Feng discover that three mice have tumours significantly smaller than before. After repeated failure, one of Cliff's viral variants actually seems to have some effect. Is it significant? Or is the atypical tumour decline "contaminated" by some other (unknown) condition?

The responses to this event differ. Whereas Marion (the scientific supervisor, the lab's epistemological super-ego) remains sceptical, Sandy is exuberant, because he immediately sees new possibilities for writing grant proposals for NIH.³ Sandy takes a U-turn by considering Cliff suddenly as the lab's trump card (Miedema 2012, p. 76). Cliff throws himself into work and experiences a second lease on life. He works even longer hours than before and his appetite for science revives. These are *his* experiments, *his* mice. This is *his* crucial moment. His moods swing "sickeningly between delight and despair" (p. 48), fuelled by "the propulsive energy of scientific questions, the relentless force of an investigation that might succeed", but also tormented by the possibility that "his good fortune might evaporate", that the "remission of the mice is nothing more than a freak occurrence" (p. 48). In other words, he becomes trapped in the matheme of desire ($\$ \diamond a$). He forgets about the outside world, loses track of time, becoming "paranoid" even ($\$$ in the lower-right position; p. 48). All his previous work had given him nothing, but this was his chance. More carefully than ever before, he keeps and copies his records. Do not move, do not touch! These are *his* mice, his proprietary tumours, his results. Indeed, Cliff develops "a proprietary interest in his virus and his mice" (p. 51). The "we" of normal laboratory research has decidedly shifted to the first person singular. As the novel phrases it:

All his thoughts and actions served R-7. Cliff saw now that you could not become possessive of this kind of research. Instead, he, the researcher, had become *possesses by his creation* (p. 178, my italics).

Meanwhile, his colleague (and former girlfriend) Robin reacts with scepticism, and even suspicion. She unwillingly replicates his trials but is unable to repeat Cliff's

³"When it came to science, Sandy's motives were not entirely pure... Sandy's work was about building up himself, his ego and his persona. Sandy lacked humility; he lacked respect for the complexity of problems" (p. 32).

results. And the kind of luck that Cliff was experiencing seemed “far too rare” (p. 41). Actually, the unexpected findings function like a litmus test. Whereas Marion and Robin (but this also applies to Feng) remain sceptical and impassive, as really converted scientific subjects should, Sandy and Cliff allow their desire (for truth and funding respectively) to resurge. And now that Sandy suddenly finds “value” in Cliff’s work (p. 40), Cliff’s positions changes radically, from “failure” to “success”: like “a man in Stalinist Russia, suddenly rehabilitated” (p. 40).

A divide begins to unfold in the lab between the sceptics (Marion, mildly sceptical, and Robin, increasingly sceptical) and the believers (Sandy and Cliff), with Feng staying completely neutral.⁴ Cliff and Sandy find encouragement in the fact that the virus begins to take effect, that the experimental mice are in remission, and that there is a “measurable difference” (p. 58) compared to the control group. Indeed, “somehow in all the mess of experimental ambiguity” they may have “stumbled upon something true” (p. 58). And Sandy, somewhat prematurely no doubt, begins to compose his grant proposal “poetry”. For Cliff, the name R-7 becomes the signifier of redemption. He experiences “utter joy”, realizing (while holding his results “by the tale”) “that he’d finally gotten what he wanted” (p. 67). From now on, he sees nothing but his naked mice, although they are actually a screen or window into something more essential, more noumenal and biochemical (R-7). After killing six mice and opening their bodies, he is struck by the beauty of their blood vessels, undisturbed by cancer:

Over and over he looked, and each time he made the discovery again: his virus worked on cancer cells. He had never seen anything more beautiful or more important than the mouse before him on the table. He had never felt so solemn or so full of joy (p. 69).

He is looking at his object *a*, the target of his *cupido sciendi*, but this “object” is actually the *absence* of something, the (temporary?) absence of the tumour.

All his hours in the lab, working with the virus. All the care and ambiguity and blood and shit involved with tumour models in living mice – all that seemed like nothing now as he looked at the normal, healthy corpse before him. Here was the way forward. Here was the human body writ small (p. 69).

For indeed: the mouse’s body is actually a window into the human body, and its biochemistry can be extrapolated in principle to human biochemistry. The biochemical letters or elements (στοιχεῖα): the noumenal, symbolical essence of all mammal bodies is basically the same. The mouse’s body is a kind of elementary textbook or manual containing the elements of human biochemistry. These symbols, these letters and numbers, suddenly seem to speak out to him, and to speak for themselves.

Meanwhile, a second line of research is opened up. While Cliff himself focusses on this virus and his mice, Robin decides to change her perspective and to secretly monitor Cliff. Instead of his viruses, she decides to study his practices. Cliff the scientific subject becomes her “case”.

⁴ “[Feng] was a skilled scientist... but science did not move him... He would not allow his imagination to seep out” (p. 125).

9.4 Suspicious Minds

Actually, the collision between scepticism and optimism unfolds on two levels, on the level of research practices (between Robin and Cliff), but also on the level of scientific publishing (between Marion and Sandy). Whereas Marion (like Gottlieb in *Martin Arrowsmith*) insists that more data are needed and more research has to be done before a publication can be considered, Sandy wants to seize the moment and use the advantage for putting in grant applications, before they will be overtaken by others. Whereas Sandy argues that “now is the time”, Marion counters by saying that “it’s premature” (p. 71), carrying her scepticism with her at all times, like “quinine” (p. 139), thereby fostering her immunity to enthusiasm. Eventually, Sandy frames the alternatives quite outspokenly. In science, there were those who triumphed and those who faded: “did she want to end up like Rosalind Franklin or Watson and Crick?” (p. 74).

The collision between Robin and Cliff, however, is more vicious. Robin deplors that Cliff’s work now has priority, not only in the sense that she has to drop her own project in order to work on his, but also literally, in the sense that he now has priority when it comes to lab equipment and lab space (a very scarce resource in this competitive arena). Sandy and Marion are preparing a paper on R-7 to be submitted to *Nature* and Robin’s assignment merely is to “reproduce Cliff’s results” (p. 106). And when Marion notices her resistance, she threatens Robin with expelling her from the lab. Yet, while R-7 is beginning to draw mass media attention, Robin fails to repeat Cliff’s results. Cliff’s virus “seemed impotent in her hands” (p. 118). Frustrated, she rips the pages on the cells out of her lab notebook and gives them to him. They’re yours... They’re your cells... It’s your virus, you figure out why it didn’t work” (p. 119). But as Marion phrases it: “blaming ex-boyfriends for one’s failures was not the behaviour of a scientist”, and her position soon becomes “untenable” (p. 137).

Cliff increasingly begins to claim ownership for his work, begins to dream about a future lab of his own, and he even gives an interview in the first person singular, for which he is scolded by Sandy (“We are selling R-7. Not you. Not your career”, p. 169). He even asks Sandy’s youngest daughter (the Donne expert) for a literary quote which he can use at the beginning of “his” paper. She comes up with “What’s your dark meaning mouse?” from Shakespeare’s *Love’s Labour’s Lost* (act 5, scene 2). But this sentence is rejected immediately by Marion and Sandy, and sacrificed to the impersonal, hyper-prosaic, academic “we”. Even Feng becomes tired of Cliff and “his” discovery.

Meanwhile, Robin still fails to confirm Cliff’s results and Jacob (Marion’s “opinionated” husband, another sceptic) even calls them “too good to be true” (p. 144). What notably disturbs Robin is Cliff’s face, his look of triumph, when gazing at his mice: “jubilant” and “blissful” (p. 152), – as if he is indeed discerning (psychoanalytically speaking) his object *a*, his (impossible) object of desire and jouissance. The lab no longer seems a prison to him, but rather a “sanctuary” (p. 156).

At a certain point, Cliff catches Robin with his lab book under her arms. Why did she take his lab book? But she cannot say, not even to herself, what she is doing with his book, although it is clear that she is driven by the suspicion that there is something wrong with Cliff's work (p. 157). This scene is reminiscent of Sartre's famous keyhole-scene (1943). A scientist (Cliff) is focussed on his object of research, on his mice, his virus, studying them, monitoring his mammals closely, until he suddenly realises that he is actually being studied by someone else. Sartre describes the situation of a person who secretly pierces through a keyhole, trying to see something (a naked body, or two naked bodies, probably?), who *think* they cannot be seen. Suddenly, the sound of footsteps is heard. And now, the voyeur himself suddenly realises that he is *being seen*, that he is caught in the act of seeing, that he himself has become the target of a revealing gaze, that his own activities are suddenly exposed (literally and figuratively), so that his world flows over into the field of vision of this other. It is a scene involving craving humans, on the look-out for something, fuelled by a desire to see, but when they finally seem about to see something (and this applies to Cliff, but also to Robin), they are caught in the act of prying, so that instead of seeing they are *being seen*. While peering at enigmatic "things" (body parts, or other intriguing items), they are actually *drawing attention to themselves*. While Cliff monitors his mice, he suddenly realises that he himself is being monitored and scrutinised. But when Robin is suddenly caught in the act of prying on Cliff, the situation is reversed again. Cliff is Robin's laboratory mouse as it were, infected (she suspects) with the FFP virus. Is he indeed fabricating or falsifying his data?

At face value, there is nothing wrong with Cliff's data, except for the fact that Robin is consistently unable to reproduce them. "I thought there was something wrong", she confesses, "I thought it was me, and I thought it was the cell line, and I thought it was the equipment, but it wasn't. It was you" (p. 158). For a fleeting moment this accusation seems to bruise his self-confidence (S_1), but soon he is his own confident self again (S_2).

Now Robin is the one who compromises her professional impassivity. She cannot stop questioning Cliff's data (p. 172). She scrutinises his lab books again and again, combing his data meticulously "as a scientific bookkeeper ... auditing his accounts" (p. 174), but she cannot find any discrepancies, until she discovers, in a bottom drawer (knowing where the keys are kept), "a messy pile of papers", with notes in Cliff's spiky handwriting, – and dashes off to the photocopier. That night, poring over her photocopies, she develops the impression that there indeed seems to be something wrong with the data. Compared with the journal article, the notes describe too many mice. The numbers in Cliff's "flimsy notes" (i.e. the context of discovery, backstage) and in the "stiff journal offprint" (i.e. the context of justification, frontstage) would not "reconcile" (p. 179). She quickly draws the conclusion that the *Nature* article is a "house of cards". But most of all, she feels "the irony acutely, that this was the one discovery she'd made in almost six years at the Philpott, and the finding was purely negative. She had uncovered not truth, but falsehood" (p. 179). Her intuition, her suspicion now seemed justified, for Cliff certainly

seemed to have repressed results that did not fit. But had he consciously committed fraud, or had he rather deceived himself?

Robin's friends and colleagues are taken aback by her behaviour: stealing and copying someone's notes, examining them "without his permission" (p. 186). Yes, Cliff's scrambled notes (never meant for anyone to see) were sloppy, but this could not justify Robin's "hysteria" (p. 187). Her behaviour seems increasingly erratic and obsessed. She is becoming a living hazard to the lab. In other words, she shifts into what Lacan refers to as the discourse of the hysteric:

§	S ₁
a	S ₂

She confronts the managers (the recipients of her message, initially Marion, but eventually ORIS, the *Office for Research Integrity in Science*: S₁ in the upper-right position) with her findings. She expects the lab managers to reconsider the status quo (which combines a privileged position for Cliff with a marginalisation of herself), but instead she is criticised for the hysteria of her questions and for the erratic, disruptive, and disrespectful nature of her behaviour (§ as agent), while Marion reminds her that scientific work requires "a modicum of trust and respect" (p. 186). She seems unaware of the motive, the desire, the objective that is actually driving her (*a* in the lower-left position). Is her fanaticism fuelled by a commitment to truth, or rather by a more personal motive, by her "obsession with Cliff" (p. 194)? For Robin, however, "the unpopularity of her position seemed to her the mark of truth" (p. 188). Her assertions are unprofitable, detrimental to her career, her own work is submerged in her suspicions and her days in the lab seem numbered (p. 188). Yes, she has lost control, but this merely reflects the "disequilibrium" of the whole lab environment (p. 190).

But there is a knowledge-effect involved as well (S₂ in the lower-right position). Colleagues begin to take a closer look at the quality of Cliff's results, which, again, "seem too good to be true" (p. 196) and a special meeting is convoked, involving qualified experts from outside the lab (S₂), in order to assess the validity of Robin's assertions. Cliff defends himself by arguing, however, that the papers found (or stolen?) by Robin were scratch notes which he (as soon as his hands had been free) had copied into his notebooks, which he had brought with him, as "an open book for anyone to see" (p. 202). He had been sloppy because he tried to do too much himself. The dates and the data in his notebook match up precisely, and during the meeting his enthusiasm is infectious, because he speaks about research, and everyone seems to relax. While Cliff's results seem beautiful, Robin's results are negative, her arguments "distasteful" (p. 202). The meeting becomes a "research seminar", shifting the focus back again from Cliff to the mice, from the discourse of the hysteric to university discourse: "how delighted they were to return to science". Many researchers were messy, but there was the book way of working (the rules and regulations) and then there was reality, the bumps and jolts of the creative process (p. 203); backstage and frontstage so to speak. In contrast to Cliff's story of perse-

verance (S₂), Robin seemed just “malcontent” (§). Like a beautiful soul, she had “no useful results, only her critique” (p. 200). She had “cracked in the sterile, claustrophobic quarters of the lab” (§ as unintended by-product of laboratory life) and had “*transferred* all the frustration from her own failures” unto Cliff (p. 208, my italics). Meanwhile, another malcontent colleague secretly gives her the phone number of someone who knows “some things about this institute” (p. 204).

9.5 Power Intervenes

First, she meets a former employee with a “conspiratorial” worldview who is now “barred” from the institute and has taken up gardening as a “horticultural therapy” (p. 213). The Philpott, he claims, is a feudal system which “sacrifices” not only mice, but scientists as well (p. 211). He tries to restore her self-confidence by saying that “Mendelsohn and Glass are very good at instilling self-doubt, because they have none, they *transfer* it into their postdocs” (p. 210, my italics). Subsequently, he informs her that he has already discussed her allegations of fraud with Alan Hackett and Jonathan Schneiderman of the *Office for Research Integrity in Science* (ORIS) at NIH. Robin, taken aback, retorts that she never gave her permission to do so, and that her claims are about “possible error”, rather than “allegations of fraud”, but he urges her to “stop thinking like *a servant*” (p. 213, my italics). Robin now realizes that she has in fact already migrated from the world of “dedicated research” (to which she once belonged) to the “muddy land of malcontents” who have “cast science off” (p. 214).

Friends warn her that Alan Hackett is “not a researcher” but “a vampire”, dissecting journal articles prying for weaknesses, living on mistrust in science, trying to bring down authors and seeing fraud everywhere: “fraud is his obsession” (p. 218). Hackett and Schneiderman represent “Big Brother watching you” (p. 219), but Robin is still struggling with the gaps between Cliff’s raw data and his published works (p. 220) and decides to consult these experts (referred to as experts in “improbable results”, p. 221). During their first meeting, Hackett presents himself by saying “We’re anthropologists, really... We study data (p. 222)”. Their job is to investigate possible misconduct and data manipulations, and therefore they are interested in Robin’s “data”. Robin on her part decides to continue her “championing the truth” (p. 222).

Soon, Marion and Sandy receive the news that ORIS wants to audit their lab, because of a possible fraud complaint. The “barbarians” are at the scientific gate (p. 227). Feng, the colleague from China, is afraid that he will be “deported” and Cliff is paralysed by the prospect that, whatever the outcome, he will be “marked” from now on (p. 229). Apparently, Robin had now really “grown hysterical” (p. 228) and seeks to “destroy her own colleagues’ work, their work, their reputation” and “tarnish their results” (p. 229). The paperwork related to R-7 is indeed disorganized and fragmentary and Marion therefore decides to piece the scraps together like “an

archaeologist of the recent past" (p. 230). Unfortunately, the original version of the questionable lab notes discovered by Robin is nowhere to be found.

Robin has in fact taken them to Hackett and Schneiderman, who find the discrepancies between the raw data and the published work "staggering" indeed (p. 234). They explain their way of working, how they trace their way backwards from journal article to data, which tend to get more and more "spotty" as they proceed. Indeed, they refer to their "forensic" methods as "reverse engineering" (p. 235). And they continue to work in this manner until they unravel the "pattern of deception", the "web of deceit" (p. 236) on the institutional level.

Subsequently she meets with Ian Morgenstern, who works for Senator Redfield from Illinois, who wants to find out on what kind of research "the six billion tax dollars received by NIH last year had actually been spent" (p. 238). He is specialised in red-listing "wasteful and decadent research appropriations". Senator Redfield had grown increasingly concerned about the "spectre of fraud", the "culture of deception" within the scientific community (p. 239). In other words, the case becomes a symptom of a much broader epistemic pandemic.

How to assess this intervention by ORIS? At first glance, this intervention seems to adhere to the structure of university discourse, with Hackett and Schneiderman as qualified experts in the role of the agent (S_2 in the upper-left position), seeing themselves as researchers and anthropologist, – as "science studies" experts, focussed on revealing indications of fraud (a in the upper-right position) emerging in the gaps between the-research-as-formally-reported and the-research-as-actually-conducted. This is how Hackett and Schneiderman like to see themselves: as researchers studying research. But on closer inspection, the dynamics rather seems to reflect a relapse into what Lacan refers to as the discourse of the Master:

S_1	S_2
$\$$	a

Self-doubt, the basic questionability of their analyses, is disavowed ($\$$ is pushed into the lower-left position). ORIS occupies a position of authority, acting self-assured, both in term of the legitimacy and in terms of the methodology of their endeavour. Precisely when Cliff experiences "the deepest joy he'd ever known", ORIS "blocks his path", disconnecting him from his object,⁵ so that he seems to have as little hope of escape as the test animals "scuffling in their cages" (p. 244). Instead of devoting his time and intentionality solely and exclusively to his R-7 virus research, he now has to turn around as it were to face the ORIS experts and answer the questions they address to him (S_2 in the upper-right position). The R-7 virus is replaced by a different kind of object a , namely: instances of misconduct hidden somewhere in his files. And S_2 is put to work. Indeed, ORIS pushes scientists into action, forcing them to provide Hackett and Schneiderman with piles of docu-

⁵"Science is what I love. It's my life and they're trying to take it away from me... But I can't give up research, it's my vocation" (p. 245).

ments, in response to their queries, which somehow should produce the object *a* (lower-right position): instances of fraud as by-products of biomedical research. In other words, Cliff as a scientific subject now finds himself in the role of target (S_2 in the upper-right position). ORIS is allegedly fuelled by normative imperatives (the fight against fraud, S_1 in the lower-left position), but other disavowed motives (the lust for power, resentment against scientists, etc.) may also play a role. The jouissance involved in this inquisitive practice (from the ORIS perspective, that is), is the pleasure of science-bashing, for instance by exposing and red-listing apparently irrelevant research projects.

This is even more obvious when the focus of attention shifts from ORIS to the Redfield Subcommittee on Science and Technology. The integrity of the lab is now seriously questioned. Cliff's notes (allegedly containing the object *a*) are subjected to a forensic ink analysis. The authorities hope to uncover a "whole culture of scientific finessing and fraud" by subjecting the scientists to a formal hearing. When Redfield refers to the institute as a "totalitarian system", an "oppressive regime", this is not completely besides the truth of course as we have seen, but it also seems self-referential. In the post-truth era, science as such now seems to be on trial (p. 291). The Master (the Senator, S_1) is having his revenge on the emancipated scientists (S_2). But in the end the tables are turned again, when yet another panel calls for "an external review of the structures and processes used for ethical oversight at NIH" itself (p. 329).

9.6 Working Through and Reparation? The Level of the Self

From the perspective of university discourse, the most challenging disaster is the intrusion of the real. Suddenly, there is a recurrence of the tumour in the mice, which puts Cliff's data into question. Recurrence could be an interesting finding in itself, revealing something about the complexity of the interplay between virus, immune system and cancerous cells, and initially Cliff is fascinated by the phenomenon. But in view of the pressures, it implies the failure of his R-7 project. To make matters even worse, replication tests conducted in other labs are not getting the expected results. They fail to confirm Cliff's claims. Marion concludes that they published too opportunistically, too soon, and decides to retract the *Nature* paper.

According to Bouter (2015) there are only losers in this novel, but this does not seem completely true. In the aftermath of the crisis, Sandy accepts a new position, as head of a new private cancer facility in Wellesley, a position that is bound to make him an even richer man. But Cliff also seems to recover from the trauma. During the denouement or catharsis stage (the final chapters of the novel), when the discourse of the analyst takes the floor, Cliff realises that he will be able to work again with a clear name. He has lost 2 years of work, but is more experienced now, because of all the turmoil, and resolved to make a better start. He still loves science, the slow, exhausting work, the rush of discovery, and will never give that up. He continues to be susceptible to the quest for knowledge, coming from a promising new object of

research (a) and from his scientific vocation (S_1) on the other. Moreover, his spirit revives as he discerns in himself a “talent for restoration”, an ability to learn from his experiences and to see himself “as a character in a bildungsroman” (p. 329). Thus, he is able to find a new position in Utah. During these self-reflections or reflexive exercises (Cliff’s self-analysis if you like), S_2 becomes suspended (pushed into the lower-left position) in order to take an oblique perspective on science. He now acknowledges that, although research (the daily toiling in response to and in interaction with the intractable object: a in the upper-left position) is a commanding, taxing and frustrating enterprise (M_2), this edifying experience allows him to repair his *Spaltung* ($\$$ in the upper-right position), so that he can recover and reconfirm his loyalty to his calling, his “vocation” (S_1 in the lower-right position; ($M_2 \rightarrow M_3$)):

a	$\$$
S_2	S_1

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