CHAPTER 7

Normativity
Inhabiting Statuses in "Open Science"

7.1 This Chapter's Plan

This chapter considers "open science" as a practical problem for scientists. The "open science movement" – a set of various governmental and organizational initiatives – has been described as aiming "to foster the wide dissemination, scrutiny and reuse of research components for the good of science and society" (Leonelli 2023, 1), but "open science" has also been identified as "an ambiguous and deeply political concept" (Ross-Hellauer et al. 2022, 13).[1] In the naturalistic spirit of my inquiry, I confine myself to what is arguably central to it: the extended access to research data. I consider how researchers evaluate the social and moral accountabilities of the open access to data and the tensions that result from them. I focus on astronomy, where the access to research data has been remarkably open (see Chapter 6).[2] Most large scientific datasets are made by collaborations and thus I examine two exemplars. I begin with the ALLSKY (pseudo-acronym) consortium and then return to the MUWAGS (Multiwavelength Galaxy Survey; a pseudonym) collaboration described in Chapter 6. As members of both teams prepared datasets for public release, they became both inquirers into, and actors in, what many astronomers refer to as their discipline's "culture of open data access." I witnessed these teams being groups of "practical methodologists" (Garfinkel 1967, 180) who used their "inner dialogues" to explore the normative expectations and tensions of this domain, seeking to inhabit a proper status in it. I argue that examining scientists' understanding of status and its achievement offers resources for a refined critique of "open science" that is considerate of the context sensitivity of

[1] See also Mirowski (2018) and Beck et al. (2022).
[2] There are also remarkable communal open software developments in astronomy, such as the work of the Astropy collaboration (2013, 2018, 2022).

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data production and use. Along the way, we will examine some methods of how scientists, as members, are doing ethnography.

7.2 "What Do We Owe to Others?"

Let us begin with a discussion of the public release of a large dataset among members of ALLSKY, an international collaboration that was to build and operate a dedicated telescope for a novel photographic sky survey. This survey would revisit the same parts of the sky every two weeks to detect variable sources in the "dynamic sky," including asteroids that could hit the Earth. Adding these exposures would disattend from variations and produce very deep images of the "static sky," particular in its deep and medium deep survey components. The survey would include the y band (around 960 nanometer), a waveband missing in most other projects but useful for detecting distant quasars (active galactic nuclei) and brown dwarfs (substellar objects). This made ALLSKY distinct from existing projects like the Sloan Digital Sky Survey (SDSS, cf. Chapter 6). The ALLSKY consortium comprised 130 scientists working at 36 institutes in 6 countries, who contributed to the building and operating costs for early access to its data.

It had been decided at the outset that ALLSKY would make a comprehensive public data release after its completion, but this was far in the future. In the meantime, fellow astronomers could become envious of the consortium's data. This was a concern for the ALLSKY team. When Henry (pseudonym), the director of a member institute, returned from an ALLSKY board meeting and reported about it to a group of local ALLSKY researchers, he addressed this issue. An important context for this discussion is the institute's earlier involvement in the SDSS, which had published an Early Data Release (EDR) two years into its first five-year observing phase.[3]

Transcript 7.1

1 Henry: Another relevant point was that the ((*ALLSKY*)) board at least talked about that we need to do something else about making the data public to the world. At the moment it says there will be one data release just exactly one year after the whole affair is done. That means … in five years down the road there will be a data dump. Sloan ((*Digital Sky Survey*)) and other

[3] See the Appendix for a complete list of the transcription conventions adopted.

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experience has shown that this just makes the project unpopular with the community … which if you write follow up telescope proposals … if you write grant proposals … if you write this and that … just always … you know … the envy factor … just always kills the proposals. So … ehm … one of the specific things that was actually thought about was to have … a year after the survey starts … to release a multi-color dataset that covers one percent of the sky to a medium depth. Perhaps even popular parts of the sky. But there is probably also something where at the April meeting input will be solicited.

2 Eddie: That sounds like a really bad idea.
3 Henry: Hmm?
4 Eddie: That sounds like a really bad idea.
5 Francesca: Did you say just one per cent?
6 Henry: [Yeah.
7 Joe: [Yeah.
8 Eddie: Aha … HA-HA-HA-HA … let's just release the first byte … the first bit to everybody.
9 ( ): (EDR)
10 Henry: Well … that's what ((*the SDSS*)) EDR ((*Early Data Release*)) was.
11 (Group): ((*intense cross-talking*))
12 Joe: But EDR was a different motivation … EDR was to prove to the funding … to the funders that they can actually publish … you know … process and publish data. That was different. That wasn't for the community … that was to keep the money flowing.
13 Henry: That's true … but if you … for example … ( )
14 Joe: I know … if it was full depth … like … if you … you know …no … well we need to discuss … obviously.
15 ( ): That sounds like
16 Henry: That is obviously to be discussed.
17 Eddie: ha-ha-ha-ha-ha If I was on a National Science Foundation panel … I wouldn't buy that. I'd be like … "forget it!"
18 Henry: Ehm … You know … it's not my …
19 Eddie: I know.
20 Joe: Is this a suggestion … or is this the official board suggestion?
21 Henry: No … the board said … for example … one could consider a near real time release of ALLSKY data covering one percent of the sky. It's just … you know …
22 Nour: Ehm … what's specific with ALLSKY?

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23 Francesca: Its depth …
24 Joe: Its y band
25 Henry: Its time dependence
26 Joe: Yeah
27 Eddie: Its time dependence in ((*sky*)) area.
28 Keira: So … an area pre-release is obviously not useful?
29 Joe: And a time dependence pre-release?
30 Kristin: That is difficult.
31 Henry: Why? I mean three hundred … you know … three hundred or a thousand square degrees with … time sampling is a dataset that doesn't exist.
32 Joe: Yeah … but it's also the dataset that everybody in the science consortium paid to get first. So …
33 Henry: Ah::: … so now you're saying it's already too much! You see … this is how the number came about. I've heard this is ridiculously little.
34 Eddie: I think it makes no sense to release … something so small as a first data release. The point is that the three interesting things about ALLSKY are area … depth in the medium deep survey … and a time sampling. And … so … if … no … the first data release the community needs to have all three aspects in it. ehm … and it's okay if that comes two years after the start of observations. But the point is we do have to make something useful available for the community … because otherwise it will just be viewed as an insult.

The conversation documents these scientists' expectation that fellow researchers would hold them accountable for releasing their data. Henry reports the board's concern that astronomers beyond the collaboration, unable to access ALLSKY's data in a timely fashion, could become envious and may, when serving on review panels, punish ALLSKY members by rejecting their follow-up observing or grant proposals. This sort of retaliation, Henry argues, was likely. To preempt this, a certain amount of data could be released early. But Eddie, a tenured staff scientist, rejects the proposed amount as insufficient and emerges as a thoroughly critical voice. His critique (in lines 2 and 4) opens the floor for a collaborative exploration of what is specific about the new dataset and how much of it could be shared without violating the interests of the consortium that pays for the survey. Francesca's question of clarification (line 5) is followed by Eddie's apparently ironic suggestion to share an unusably small amount of data (line 8), comparisons with the SDSS EDR (lines 10 and 12), reminders of

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the provisional state of discussion (line 16), Eddie's impersonation (using reported direct speech) of an imagined peer reviewer (line 17), as well as a request about the offer's author (line 20). Eventually, participants turn to review the ALLSKY dataset's unique value (lines 22 to 27), which team members felt obliged to share, at least in part, and in a timely manner (lines 28 to 34).

Transcript 7.1 demonstrates how ALLSKY members anticipated their peers' expectations, but it also suggests that we need to know more about it and its context to understand the team's decision-making. ALLSKY's regular survey operation was not to begin for another two years after this discussion, a period in which a series of constraints to its conduct emerged that derailed the options that team members had discussed. One of these was that a significant part of ALLSKY's funding came from the United States Air Force. Wary that EDRs may reveal the orbits of secret military satellites, it initially blocked the sharing of some data even within the collaboration. Another constraint was the lack of funding to prepare a partial data pre-release. As a result, a comprehensive data release was published only two years after the end of survey operations. Collaboration members shared these reasons with their peers external to the team.

7.3 Norms and Statuses

These later developments do not affect this conversation's exploratory character, which is worth examining in more detail. With nobody refusing to release some data early, it marked the beginning of a joint search for what an adequate quality and amount of data to release early would be like, informed by an understanding of the survey's specifics and the consortium's self-interest. There was no rule or written document that specified the apparently normative expectations they sought to meet. As Nick Enfield (2013, 22; emphasis in original) defines them, norms are "learned patterns of behavior that are consistent in a community not because it is explicitly stated anywhere that they be followed like rules, but because *not* behaving in a manner consistent with those patterns will attract special attention in the form of surprise or sanction." That peer reviewers will reject future ALLSKY proposals if the consortium refuses to pre-release data may be a sanction. But are there norms that Henry and his colleagues can follow to preempt this threat?

Norms in everyday life, such as the expectation for a greeting to be returned, are typically unproblematic and routinely understood by

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interlocutors. While most greetings are not consciously interpreted, Henry and his colleagues cannot but interpret and argue about what an adequate ALLSKY data pre-release would be like. They may or may not come to an agreement and it is possible that not all external scientists will agree that ALLSKY will have adequately shared its data. In fact, there may not be a unique communal assessment of the team's conduct. Philosopher Robert Brandom (1994, 38; emphasis in original) notes in a discussion of normativity that "the idea of communal performances, assessments, or verdicts (…) is a fiction," since "assenting, endorsing, accepting, and regarding as right are in the first instance things done by *individuals*." The normativity of sharing data is not like the normativity of responding to a greeting or that of using linguistic practices correctly.[4] But note that Henry's expression of concern (in line 1) lacks a reference to personal names and explicitly references "the community." It pertains to every astronomer who could be on a peer-evaluation committee, a marker of membership in the community of professional astronomers. This is how Henry and his fellow ALLSKY board members appear to conceive of, and acknowledge, communal assessments.

But what about the use of precedents? In line 9, an unidentified speaker appears to suggest the SDSS's EDR as a precedent for an ALLSKY data pre-release. Even though Joe points out that the SDSS EDR had been made to assure its funding and not to avoid community members' blame (in line 12), precedents have been important in this domain. After all, as described in Chapter 6, many astronomers regard the Hubble Deep Field (HDF) and the SDSS as precedents that transformed communal attitudes and practices toward data sharing.[5] Brandom (1979, 189) argues that "[s]ocial practices evolve the way case-law does – an issue may be resolved very differently depending upon where in a chain of precedents it comes up for adjudication."[6] Precedents can be invoked, but do not prescribe how this adjudication is to unfold; they are resources for its conduct.

[4] Except, perhaps, for a hypothetical rule for all researchers to make all research data public immediately after their production, it seems impossible to formulate a universal norm for releasing data publicly. This provides scientists with options and reasons to navigate demands for access to their data and other resources. Thus, Hilgartner (2017, 72) argues that scientific work entails a "dialectic of revelation and concealment through which knowledge is selectively made available and unavailable." Developing this insight in an interview-based study, Levin and Leonelli (2017, 280) conceive of openness as "a dynamic and highly situated mode of valuing the research process and its outputs." On discipline-specific differences in openness, see Velden (2013).

[5] See, for instance, Almeida et al. (2023, 3).

[6] Barnes (1995, 55) points out that following a rule or norm means to act "in a way learned by familiarity with previous accepted instances or examples. The intention is to act in proper analogy with those examples."

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Participants in the discussion examine ALLSKY's rights and duties. In so doing, they probe into what we may call its status. Paul Kockelman (2007, 57) follows Ralph Linton (1936) in defining a person's status as a "collection of rights and responsibilities attendant upon inhabiting a certain position in the social fabric."[7] These rights and responsibilities are not necessarily fixed once and for all but are often contestable and negotiable. Statuses are hard to pin down because they are objects in semiotic processes. They are never directly observable but always interpreted through uses of signs. ALLSKY, however, is not a human person. It is a large project run by an internationally distributed team that is a "unit of accountability" (Kockelman 2007, 154). Through its organization, name, and acronym it resembles a firm or juridical person. To outsiders it is a unit with a singular observing program and dataset that it will publish as a collective author. Henry and his colleagues leave little doubt that it inhabits a certain position in astronomy's "social fabric."[8]

If inhabiting a status is a work-in-progress,[9] then how do collaboration members manage their incumbency? To examine this question naturalistically we can take inspiration from Harold Garfinkel's study of how Agnes, a person undergoing sex-reassignment surgery, sought to pass as a properly gendered person. Garfinkel (1967, 180) describes Agnes as a "practical methodologist" who investigates "everyday activities as members' methods for producing correct decisions about normal sexuality in ordinary activities." Agnes does so for her own uses. Elsewhere, Garfinkel remarks that "members doing sociology" ought to "treat the rational properties of practical activities as 'anthropologically strange'" (Garfinkel 1967, 9). He notices that it is in "doing, recognizing, and using ethnographies" that members accomplish the "analyzability of actions-in-context." Considering that this is "for members a commonplace phenomenon" (Garfinkel 1967, 10), it would seem that "doing ethnography" is a routine task and achievement for members. In Garfinkel's view, every social actor, as member, is an ethnographer, and here we ought to include Agnes (who made visible to Garfinkel and his readers what "properly gendered persons" routinely do).

[7] Like Kockelman and Linton, I do not understand status as signifying prestige or an element in a social hierarchy. Enfield (2013, 57) points out that status resembles the notion of membership category in conversation analysis and ethnomethodology, whose practitioners likewise examine its contextual and sequential production in specific cases (cf. Sacks 1992; Housley and Fitzgerald 2009; Fitzgerald and Housley 2015).

[8] How the collaboration acts collectively appears to shape its identity in its social environment (cf. Blommaert 2019).

[9] In Linton's (1936) terminology, this pertains to achieved statuses (that are inhabited through intentional acts; cf. Kockelman 2007), as contrasted with ascribed statuses (that one is born into).

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We may also include these astronomers, who seek to pass as scientists who make their data adequately accessible.[10] While Agnes manages what are, to her, novel gender expectations, these scientists seek to manage what are, to them, novel expectations of a public data release. Neither Agnes nor these scientists can act unreflectively as in returning an everyday greeting.

Note how Henry and his colleagues locate practices of releasing data and their assessment within their professional world, their academic discipline. Many astronomers know, of course, that public policies and institutional conditions and accountabilities shape the domain in which they work, including, for example, NASA's data policies and initiatives for interdisciplinarity promoted since the 1990s.[11] But in this discussion such organizational constraints are mentioned only once, in Eddie's impersonation of a United States National Science Foundation reviewer (line 17). This agency mandates that the outputs of its funded projects are made "publicly available to the greatest extent" in a timely fashion.[12]

Many astronomers express their understanding of this "internalism" in cultural terms as a contrast with the alleged closure of high-energy physics, where the measurements produced by particle accelerators are not shared beyond instrument-centered collaborations that tend to keep their data and analysis software secret.[13] Thus, one astronomer, in his early thirties, told me:

> *Transcript 7.2*
> These are simply different cultures. For us it is clear that data ought to be open … and for them ((*the high-energy physicists*)) it is obvious that it is stupid to publish data … since other people can't know how to deal with them. That is the most common argument … "It is so complicated to get from our raw data to our data products. Nobody else would have a chance to get it right."

But not all uses of the term "culture" are so clear-cut. When I asked Robert Williams about the HDF as a precedent for changing astronomers' attitudes of access to their data (cf. Chapter 6), he responded that "it seemed

[10] Compare how Hester and Eglin (2017, 200) call any social actor "an inquirer into the practical circumstances that confront the member going about the business of everyday life, an ethnographer of its culture." Ethnography, as these ethnomethodologists understand it, does not involve a critical step back from acting in context. Garfinkel glosses over the distinction of "doing ethnography" and its products – typically written accounts. See also Section 7.5 and Chapters 2, 3, and 8.

[11] See Genova (2018) and Borgman and Wofford (2021) on astronomy as a model of open data access.

[12] See nsf.gov/public-access (accessed July 7, 2025).

[13] See also White (2007). The attitude here ascribed to high-energy physicists appears to have changed. Laboratories such as CERN in Geneva (Switzerland) have made much of their data public, cf. opendata.cern.ch (accessed May 13, 2025). With the involvement of the US Air Force in its funding and operation, ALLSKY was to meet a very different culture.

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to me really important to change this whole … culture." Note the slight pause before Williams utters the word "culture," as if he was searching for a word that better expressed his intended meaning, but finding none. Utterances like these suggest that these scientists invoke the notion of "culture" for general accounts of data access practices in astronomy – that data somehow become openly accessible at all. But to understand its practical implications for researchers we need to examine their conduct's finer granularity.

7.4 Doing "Being 'Open Scientists'"

Equipped with these considerations, let us return to the MUWAGS collaboration that I discussed in Chapter 6. Remember that MUWAGS was an international team of astronomers that made a multiwavelength dataset of the galaxy supercluster A2713 to investigate its dark matter content and its environmental impact on galaxy evolution. Much of MUWAGS's collaborative work was oriented toward making a master catalog: a table of measured and estimated properties of ca. 88.000 objects detected in the A2713 field based on the team's ground-based optical data, the Hubble Space Telescope (HST) imaging mosaic, and the Spitzer Multi-Band Imaging Photometer infrared observations. This catalog was a resource for most team members' research projects. It was also the central element of the public data release that the team published at the end of its core science work.

As successful applicants for observing time at major observatories, including the HST, senior MUWAGS scientists' membership in professional astronomy was established beyond doubt. But how could they "do being 'open scientists'" together?[14] How could they act to produce a data release that was adequate for the team, as its authors, and usable for scientists beyond the team? And how do these questions point to methodological issues of an ethnographic kind?

Let us ponder these questions by examining a discussion at a MUWAGS collaboration meeting a few months before the data release. At this moment the catalog was already finished – "frozen in" as Mallory, the principal investigator, called it (cf. Chapters 6 and 8). The team now considered options for how to release it and how to formulate instructions for users that were to be posted on the archive website. Besides Mallory – who is gathering ideas for this text –, Christina, Mike, Ken, and Ben are

[14] Here I imitate Sacks's (1992, vol. 2, 215) title, "Doing 'Being Ordinary.'"

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the speakers in the following discussion, at which Elias and three other team members, as well as me (GH) as an ethnographer, were also present. IMAGS and LENSURV (pseudo-acronyms) are the names of broadly similar collaborations that used public observatories and prepared data releases, whereas GalaxFit and REDCOR (pseudo-acronyms) are the names of open-access computer codes for data analysis.

Transcript 7.3

1	Christina:	Now IMAGS has an interesting eh … so … data use policy in that you can download and use the data for anything but if you want to publish it you have to contact … them.
2		((*3 second pause*))
3	Mallory:	For permission?
4	Christina:	For permission … yeah. This is a new one only. I never heard people doing this before.
5	Mallory:	And are they are they … is there authorship … eh issues there as well?
6	Christina:	I … eh eh so we've been looking at different models for authorship for the LENSURV because … we've had various problems with people using the archive data but … anyway … ehm but we've been looking at different models and that's the one that I'm personally interested in and that's the IMAGS model. So I don't propose we have any of that but … we cou::ld if we wanted … if we were worried about our ke::y science being taken by other people.
7	Mallory:	Well I think I think we've made a decision when we made it public that … eh … we weren't gonna wait so long that everything has been done by us … ehh … but we and we weren't gonna release things … for which we put in a ton of work and never had a chance to have … ehmm … reap the rewards. But for the rest of it I think it's it's kind of the other side of the coin is the incentive for us.
8	Christina:	Yes no I think we should
9	Mallory:	So I don't think we can release it and then say you can't use it for the science (area).
10	Christina:	No:: but we could have something saying "we … we're really keen to hear about what you are doing
11	Mallory:	Yeah!
12	Christina:	with the data."
13	Mallory:	Oh yeah definitely. "Tell us" … OR "If you don't wanna do it on your own if you want to collaborate with us that's fine as well."

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14 Christina: Yeah
15 Mike: Mm hm
16 Mallory: Yeah. And I think a friendly note saying "Please keep us informed as to how you use these data." … That would be a way out of it.
17 Ken: Or directions on (how) to use the data … like with GalaxFit … Don't you have to register or give your email so you can download it? So that you can
18 Mike: GalaxFit? No!
19 Ken: Who did that? Somebody did that with an application you know
20 Mallory: Ye::ah!
21 Ken: I don't want I don't want to … basically they were saying it was for updates.
22 Christina: Yeah.
23 Ken: I just want to [keep a list of people that are
24 Ben: [CHUANG
25 Ken: interested.
26 Ben: Chuang asks people to send him an email but he … because he …
constantly sends around upgrades on the on the program but it's not a need
27 Mike: Aguirre does that for REDCOR
28 Ken: That could be that you just don't get to the download page … unless you put an email address.
You know [( )
29 Mike: [when he asks up to … ehh … what? … certain to reference certain papers of his … if you're using his work and to send him an email if you're using the code … But you can still download them and not do anything.
30 Christina: Yeah that's not bad.
31 Mallory: I think I'll put that on top of the page that … you know … "A few things" … "please read before you download" … "please send us your email" … you know … "please reference"
32 Ken: "Please (put in your email address and) ( )
33 Ben: Put put check boxes … like that
34 Ken: "I've read [the
35 Ben: ["the terms and conditions"
36 Mallory: haha
37 (Group): HA-HA-HA-HA-HA-ha-ha-ha ((*collective laughter*))
38 Mallory: Yeah
39 Ken: A statement … "Billing address … please add your credit card here"
40 Ben: hhh[( )

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41 (Group): [HA-HA-HA-HA-HA-ha-ha-ha ((*explosive collective laughter*))
42 Ken: Not that we'll use it of course
43 (Group): uhuhuhuh
44 Ken: but we need it.
45 (Group): ha-ha-ha-ha ((*collective laughter subsiding*))
46 Mike: It's always good to have that information.
47 Mallory: A deposit
48 Ken: A deposit
49 Mallory: [A deposit
50 Mike: [he-he-he-he
51 Mallory: "If you misuse the data we will charge you."
52 Ben: ha-ha-ha
53 Christina: Anything new might be less worth if it is just internet-based that people submit their (internet)( ) e-mail but I'm not very sure how many people would do that … there is only a handful ( ) not to worry
54 Ken: But it would be easier for people to just put in … to fill in a field before they press the download button

Whereas the conversationalists in Transcript 7.1 examined duties and responsibilities, here the focus is on the balance of credit and responsibility characteristic of authorship.[15] These astronomers' concern is to be recognized as the authors of data, while not being "scooped" for scientific results and blamed for misuses of their data. Christina's description of the IMAGS data release policy as a possible precedent, a model for how MUWAGS could proceed (line 1), turns into an exercise in the collaborative formulation of instructions for users of the MUWAGS data release. It begins with Christina formulating a request to users, hearable through her use of syntax and prosody as quoting a text (lines 10 and 12). Mallory continues in the same style (lines 13 and 16). Ken, Mike, and Ben supplement Christina's account of the IMAGS model with their knowledge of how other researchers share their open-access data analysis software – two possible models for MUWAGS (lines 17 to 29). Instead of making data or software available unconditionally to anonymous users, these discussants seek to identify user identities and explore measures to hold them to account. Mallory uses these suggestions to formulate written instructions. As before it is her use of syntax and prosody that makes her utterance hearable as the quotation of a text (line 31).

[15] On authorship as credit and responsibility see Foucault (1977), Rennie et al. (1997), Biagioli (2003, 2006), Galison (2003), and O'Neill (2022).

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Ken and Ben build on Mallory's formulation, continuing with similar prosody indicating textual quotation, but invoking the language of legal contracts and payments (lines 32 to 39). Unlike Christina's and Mallory's formulations (in lines 10, 12, 13, and 16), their playful and apparently ironic remarks elicit loud collective laughter (in lines 37 and 41), initiated, respectively, by Mallory (line 36) and Ben (line 40), and subsequently petering out (in lines 43 and 45). This laughter appears to edit, or even negate, the literal meaning of these contractual terms. With her suggestion for users to leave a monetary deposit, Mallory (in lines 47 and 49) continues to invoke the language of legal contracts and again uses syntax and prosody to mark a textual quotation (line 51). Her formulation instigates Ben's and Mike's laughter (line 50 and 52). Christina subsequently returns (in line 53) to speech with normal prosody. She does not continue to laugh, nor does she build on the formulation, thus marking a return to a non-ironic mode.

These invocations of the language of legal contracts can be heard as being ironical and playful.[16] This irony is invoked and sustained, and thereby apparently understood, by those who participate in this formulating and in the subsequent laughter.[17] References to users committing to a contractual agreement can be heard as expressing these scientists' concern about the proper use of their data and their desire to hold users accountable for their actions in a legal sense. Although these suggestions were dismissed, they arguably point to what these scientists would like but cannot have in astronomy's regime of open access. Christina's return to non-ironic speech (in line 53) marks a return to assessing what one could, after all, do as "open scientists": asking data users for their email addresses and formulating written instructions for them.

Note that by invoking the language of legal contracts ("terms and conditions"), uses of bank accounts and credit cards, these scientists are borrowing from the everyday culture that these young astronomers from Western Europe, the USA, and Canada partly share, and translating from it to a novel domain of open data access. These junior scientists seek to act adequately in this domain. Their joking and playful uses of irony seem to be conscious and deliberate as they examine what can be expected of them and what they could get away with as they inhabit a status in this domain of open access.

[16] Compare this with line 8 in Transcript 7.1, where Eddie likewise adds laughter to an utterance and thus makes it hearable as being ironic.

[17] Compare Sidnell (2010a, 70). See also Hutchby and Drew (1995) and Clift (1999).

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7.5 Ethnography, Translation, and Irony

As these scientists use terms from one domain for exploring how to act in another, translation and irony are two of their "methods of social inquiry" (Garfinkel 1967, 104). Examining them further helps refine the notion of "scientists doing ethnography" that I began considering in Chapters 2 and 3. Translation has been deeply implicated in how sociocultural anthropologists have conceived of ethnography. It was often understood, sometimes tacitly, as the translation of systems, not only of language, but also of "cultures as an assemblage of texts" (Geertz 1973, 448) and "modes of thought" (Lienhardt 1954, 95), particularly in British social anthropology (Asad 1986). Thus conceived, its currency has reached beyond the writing of ethnographies into debates on relativism and to Thomas Kuhn's view of scientific change.[18] Notably, Kuhn (1970, 175) argues that communities of scientists are "language communities." As Susan Gal (2015) observes, sociologists' and anthropologists' more recent understandings of translation point to a wide range of semiotic processes. These include approaches like Actor-Network Theory (Latour 2005), which dwells on a metaphorical understanding of translation, as well as what is essential to ethnography as a method: "[l]anguage learning, note-taking, interaction, transcription, and the effort to make findings intelligible to colleagues all require translations of various kinds" (Gal 2015, 228).

William Hanks and Carlo Severi (2014, 2) insist that people from all walks of life translate by means of what they, as linguistic anthropologists, call "code switching, blending, crossing, paraphrasing, reported speech, and giving accounts."[19] They argue that "understanding is itself a matter of translation" (Hanks and Severi 2014, 2), or, as Hanks (2014, 21; emphasis in original) puts it yet more poignantly, "the intralingual translation of an expression quite simply *is its meaning*." It is not only that translation is prevalent in monolingual speech. Rather, "translation is not only productive but at the heart of language as a social form, and society as the dynamic product of self-interpretation" (Hanks 2014, 33). This insight may well be gained from Harvey Sacks' lectures on conversation,[20] but Hanks and Severi take inspiration from Roman Jakobson's (1959) essay "On

[18] See, for example, Hollis and Lukes (1982).

[19] Note that translation harks back to early concerns of ethnomethodology, whose central notion of indexicality was inspired by considering troubles in early efforts of machine translation (Garfinkel and Sacks 1970, 349).

[20] See especially Sacks' lecture on "patients with observers" as "performers with audience" (Sacks 1992, vol. 2, 104–113).

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Linguistic Aspects of Translation." For Jakobson, intralingual translation is one of three kinds of translation besides the more familiar cross-language translation and the cross-modal translation of speech into gestures.[21]

An alternative formulation of the generativity of translation is Michael Silverstein's (2003) notion of transduction. Silverstein questions that one term, translation, adequately describes what is in fact a continuum of practices, of which purely denotational "word-by-word" translation is one extreme and at the same time a caricature, since there may never be a complete and specifiable correspondence of grammatical-categorial spaces in source and target languages. Silverstein proposes the notion of transduction as a mode that takes translation seriously as an unavoidably indexical and interactional practice.[22]

Consonant with Silverstein's reasoning, Hanks and Severi (2014, 2) note that "[i]ronically, the process of successive failed translation may be our best tool in discerning what is specific to any object society or to any 'original.' In other words, it becomes a method (…)." A method, one may add, for analysts and members. A method, too, for exploring unfamiliar worlds, such as, for these junior scientists, the open access to their data. Christina, Mallory, Ben, Ken, and Mike, it seems, attempted to translate between two domains. But compared to the practices of translation that Silverstein (2003) describes – from the "other's language" to one's own –, theirs was a translation in the opposite direction, as they playfully adopted terms and actions from their quotidian culture to describe actions in astronomy's "culture of open data access."[23]

By addressing the "simultaneous presence of two dimensions of meaning" (Clift 1999, 533) irony shares some aspects with translation, but, rather than seeking to reveal "sameness-in-difference" (Gal 2015, 226), it arguably projects "an attitude of disbelief along with the 'outer' meaning of their words" to "convey a contrary, 'inner,' meaning to those who can catch the cue." As such, it can express a "questioning attitude" or "critical stance"

[21] Each of these kinds draws on Charles Sanders Peirce's notions of the sign and chain-like semiosis, which precipitate open-ended processes of interpretation and communication (cf. Peirce 1932, 135; Daniel 1984, 19; and Parmentier 1994, 5; see also the discussion in Hoeppe 2020a).

[22] For Silverstein, who (like Jakobson) draws on Peirce, transduction is intermediate between translation (narrowly conceived) and the transformation of meaning: "there is always something of the transformational in every attempted translation" (Silverstein 2003, 93).

[23] This direction of translation was common in early ethnographic accounts which projected elements of Euro-American culture, history, and mythology onto the societies investigated. This is recognizable, for example, in the title of Edward Evans-Pritchard's (1937) book *Witchcraft, Oracles, and Magic among the Azande*, that projects ritual notions from European history onto the practices of an African society.

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(Fernandez and Huber 2001, 1). In Transcript 7.3, I see it as consonant with playfulness as an exploration of possible alternative actions.[24] Yet, as Hayden White (1973, 37) argues, irony may also signal "the ascent of thought in a given area of inquiry to a level of self-consciousness on which a genuinely 'enlightened' – that is to say, self-critical – conceptualization of the world and its processes has become possible."

7.6 A Theft of Data?

Participants in the discussions described in Transcripts 7.1 and 7.3 considered their duties and rights in sharing their data prospectively. Let us refine our inquiry and consider retrospective assessments of duties and rights in a case that sheds further light on the open access to data as a moral issue. When MUWAGS was about to publish its data release, the standard one-year period of the team's exclusive proprietary use of HST observations had ended and its "raw data" (processed not by the team but by observatory staff in standard ways unspecific to any scientific use) had become available to anyone who wished to download and work with them. This was a grave concern for Christina, who learned that a competing group based in Munich (Germany) had downloaded the MUWAGS data, presumably for just the kind of analysis that she worked on herself, but had not completed yet. Consequently, she rushed to finish her analysis of the A2713 galaxy supercluster.

In Transcript 7.4, Christina has wrapped up an account of mapping dark matter in A2713, when Mallory, the team's principal investigator, asks her about the work of the Munich group (line 1). Like Christina and Mallory, Elias is a member of MUWAGS, whereas Albert, Andrew, and Anthony are (absent) members of "the Munich group," known (by Christina) and referred to by their first names. Mentioned already in Transcript 7.3, LENSURV is a large weak lensing survey with a ground-based telescope of which Christina is a member. I use quotation marks to transcribe what I heard as reported direct speech.

Transcript 7.4

1 Mallory: Hmm … (are there) any news from the Munich group (what about) their analysis?

[24] See also Chapter 4 on exploratory uses of playfulness. In an instructive anthropological study, Basso (1979) links irony to playfulness. Taken to its extreme, however, irony may amount to a suspension of seriousness and a retreat from much human social life (Nguyen 2022, 276).

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2 Christina: They stole our LENSURV data instead and started working on that which I've [( )
3 Elias: [huhuhuh[hu
4 Mallory: [hehe[he
5 Christina: [HA-HA
6 Elias: You have some (thieves following you)[( )
7 (Mallory): [HA-HA-HA
8 Christina: Ha they steal my HST ((*Hubble Space Telescope*)) data and then steal my ground-based data it's ri::ght! … haHA haHA … yeah
9 Elias: Ah:::
10 Christina: They're like "oh you wouldn't need some of the HST data … we're taking it" so …. hh-ha-ha-ha-ha-ha
11 Elias: No::: heh
12 Christina: I think they (would be in that) mood
13 Elias: Have they (started the data analysis)( )
14 Christina: Ehm … well I see Albert end of May so we did we we we also spoke about it we said "we should really do some comparisons" and (I don't know) … ehm … I wrote to Andrew and Anthony yesterday who are doing a 3D analysis and haven't heard back … so … I don't know how that's going but Andrew also has the Munich catalog so he's the … sort of most … eh … likely person to do … that sort of analysis but … they don't have the redshifts so there is not much they can do … until the data release anyway … ehh
15 Mallory: Can you take the Munich catalog?
16 Christina: Yeah yeah yeah … if we wanted to … it's not that bad an idea because they've got a much better PSF ((*Point Spread Function*)) correction scheme

Asked by Mallory about the competing team's work (line 1), Christina, a native speaker of English, responds that instead of using the MUWAGS data to "scoop" her on the analysis of A2713, as she had feared they might do, they "stole" her other dataset (line 2). As she emphasizes the verb "stole," her voice exhibits a raise in pitch, a prosodic shift. Elias and Mallory react with contained laughter (lines 3 and 4), to which Christina (in line 5) herself responds with louder laughter. Elias then interprets Christina's statement and builds on it, responding to her reference to "stealing" with a statement on "thieves" (line 6). Someone, probably Mallory, reacts with laughter (line 7), upon which Christina raises her voice in a noticeable prosodic shift (line 8), thereby animating imagined direct reported speech (line 10). Referring to members of the Munich group by their first names, she indicates that those who "stole" her data are no strangers to her and the

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others present, and would presumably even share their work ("the Munich catalog") with Christina and her colleagues (lines 14 to 16).

A notable feature of this exchange is Christina's report on the alleged theft of data and her subsequent laughter. What she presents is "troubles-talk" and one may well hear her laughter as exhibiting "troubles-resistance" (Jefferson 1984, 351), that is, her demonstration that these troubles are not getting the better of her. If so, her laughter edits, and possibly negates, the accusation's literal meaning. Since her laughter was joined by that of other collaboration members (lines 3, 4, and 7), who conceive of these data as collectively theirs, they may experience trouble as well. More specifically, this exchange can be heard as an instance of irony, where what Christina meant is not literally expressed by her words, but subverts the words' literal meaning. In using data that had become public already, the "Munich group" acted legitimately and did not breach any formal rule. Participants in this conversation certainly knew this. Recipients of irony commonly treat it as humor and react with laughter, or they build on it and thereby sustain it.[25] Here Elias, at least, does both (lines 3 and 6). But subsequently he retracts from this position (in line 11) and initiates a return to talk in a non-ironic mode (line 13).

Two days later, on a bus traveling home from the meeting, I had the opportunity to talk with Christina. As she elaborated on what she regarded as challenges in organizing the team's workload, I asked her about the alleged theft of data. In her response she specifies its moral dimension:

Transcript 7.5

1	Christina:	And that's why I think we have a problem with our team that we … we're not getting the science results out because … nobody is spending one hundred percent of their research time on it. And so … but with the competition I hurried up.
2	Götz:	The Munich collaboration … you said they kind of stole your data?
3	Christina:	They've done it again yeah he-he-he-he-he … so yeah … so yeah I I sent them a copy of the paper when we submitted it
4	Götz:	Yeah
5	Christina:	and then they stopped working on the MUWAGS data because there was nothing more they could do without photometric redshifts. And then … then they looked around which other data was available on the archive and

[25] Hutchby and Drew (1995), Clift (1999), and Sidnell (2010a).

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now they've downloaded the LENSURV data … which is the other data set I am working with.

6 Götz: It is also public?

7 Christina: It is a:lso public. So … I mean it's … yeah … and in fairness to them they always … they tell us what they are doing … so

8 Götz: So they write to you an email that they're downloading it?

9 Christina: So I mean they … yeah it's it's … they are they are being fair but it's still … a bit … a bit tiresome. You work really hard to get the data. And then people who don't spend any time writing proposals just take it from the archive and … so … it's:::: it's fair. The archive is there for a reason but … it's difficult when people download archive data to do the key science that you were planning to do with it. What you want is them to do things that you wouldn't have thought of or … aren't your key science. But when they're … in direct competition that's tough. It happens he-he-he-he-he. But now I have an … I mean … this meeting is the first time I thought about MUWAGS in a long time so … I guess I will be advisor on papers that come out in the next round but until we get them I won't be working any more scientifically on MUWAGS.

When transcribing this conversation, I realized that, by saying "kind of stole your data" (line 2) I may have unwittingly invited Christina to conceive of the Munich team's use of the data in the same way as she had done two days ago. Remarkably enough, though, she again adds laughter to her verbal response (in line 3) as well as to her account of what led to this situation (line 9). More clearly than before she acknowledges that the Munich team had not acted illegitimately and breached any formal rule in downloading the public MUWAGS data, despite her concerns about them doing so (line 9). Her reference to fairness alludes to their adherence to formal regulations.

Christina's answer and her laughter, which largely echo Transcript 7.4, support the interpretation of her utterance being ironic. Doing so questions "stealing" as the literal meaning to describe an action in the domain of open data access with the English-language vocabulary of Euro-American academics. Christina uses it to translate intralingually (in Jakobson's sense), as she rephrases and interprets an observation in her everyday language. Christina points to a concern about the regulation of data access, that is, to the possibility of competitors doing one's own key science after the proposal authors' one-year period of exclusive proprietary access has ended. She appreciates that data become public, but bemoans

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that the research goals described in the proposal are not protected for longer than the proprietary period, despite the MUWAGS team's scarcity of resources. Her complaint, then, is about the context-insensitive application of a data release policy as well as fellow researchers' ignorance of her circumstances. Unrecognizable in the transcript, Christina is one of several MUWAGS members on nonpermanent, untenured positions, making her particularly vulnerable.

By notifying Christina about downloading the data, members of the Munich group had arguably acknowledged her and her team's right to know of it, even though to do so may have been solely out of courtesy considering their personal acquaintance (cf. Transcript 7.4, line 14). Yet, for Christina, it seems to be just this familiarity of the Munich team with herself and her two projects, MUWAGS and LENSURV, that makes their uses of "her" data questionable. After all, members of the Munich team are not about to access and reuse data from an anonymous or unrelated source. These scientists know that they obtained data produced for Christina to address her key science. Thus, she regards a mere notification of these uses as insufficient. To her, fairness and properly ethical uses are not the same. These scientists' understanding of irony and translation thus points to an ethical tension in open data access. Inhabiting a status in it, Christina may want to have the right to sanction data users' actions in a context-specific way.

If the improperness of "stealing data" hinges on the familiarity of "perpetrator" and "victim" one could suspect that using data that strangers have made would be less contentious and not be regarded as a theft. However, in the circumscribed domain of this collaboration's work (as throughout astronomy), with its shared access to major facilities like the HST, there are few, if any, strangers.

Let us consider another instance of where the access to open data is being described as an act of theft, this time by a scientist who recounts his own team's actions. The following is an excerpt from a conversation I had with Norman, a PhD student in the MUWASHH project (unrelated to MUWAGS). Like Christina, he is a native English speaker.

Transcript 7.6

1 Norman: MUWASHH is the MUlti Wavelength Survey by Harvard and Hawaii and in this particular field to call that a survey is a bit of a cheat … because ah … so it's an optical plus infrared survey … so it's got 6 optical bands … or it's 7 optical bands and 3 near infrared.

2 Götz: Right.

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3 Norman: Of those we stole all of the optical imaging … and we stole one of the near infrared bands. So we've in fact … oh that's not quite true … we stole all but one of the optical bands from the archives. So we didn't actually take these data ourselves … they were publicly available. And in fact we didn't even re-reduce these data he-he-he-he-he. We didn't even steal them from the archive … someone else went … so Albert went … as part of … he called his survey MDS … what is just the Munich Deep Survey. They went to the archive … they took all the data for a bunch of different fields including the Chandra Deep Field South. Then they re-reduced the data … and then they gave it to us … and then we added the near-infrared. You get the point. We stole someone else's data and we added this stuff to it.

Norman adds light laughter to his verbal description of "stealing data from the archives." This laughter, however, does not follow mentions of the verb "stole" closely and thus its sequential import appears to differ from that of Christina's laughter in Transcripts 7.4 and 7.5. Rather, Norman frames his entire account as a series of thefts, presumably counting on my understanding of his irony. After all, data that are publicly available from an archive cannot be literally "stolen" if their use is properly referenced. Norman's point rather seems to be that doing so does not seem to give adequate credit to these data's makers. He signals a tension with an evaluative sensibility that is morally troubled by this way of acquiring scientific data.

I do not mean to suggest with these three transcripts that perceptions of data being "stolen" are pervasive in astronomy or among junior astronomers. It is noteworthy, however, that two junior scientists with little prior experience in releasing data publicly chose this wording. As such, they are, perhaps, more prone to describing it in terms of their competence of English and notions of property and ownership in the Euro-American culture with which they are familiar. The regime of open access in astronomy – shaped by institutional demands, made practicable by the digitality of its data, enabled by network infrastructures and archives, and marked by periods of exclusive proprietary access – thus instigates scientists to problematize what is owned and ownable and how it is recognizable, recognized, and limited, as owned or ownable, if only temporarily.[26] Their

[26] Note in this context Sacks' lectures on possessables and possessitives (Sacks 1992, vol. 1, 382–388, 605–609).

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considerations point to the limits of abstracting the value of data in view of personal investments and interests.

7.7 Conclusions

Normative concerns have pervaded the work that I described in earlier chapters, from agreements on standard data formats and the achievement of membership, to uses of diagrams and the composition of research teams. This chapter takes such concerns to "open science," a domain in which norms have changed swiftly, partly because of organizational policies, but also because of the internal development of disciplinary practices. I focused on two research collaborations, ALLSKY and MUWAGS. Their members' "inner dialogues" may well be described as a "perspicuous setting" (Garfinkel and Wieder 1992, 181) in which "participants must routinely and repeatedly 'place their understandings on view'" (Koschmann 2011, 436). I identified translation and uses of irony as methods for addressing and criticizing tensions in the use of open-access data and as means to extend the scope of collaborative deliberation. For members, issues of data access and authorship are enduring concerns, specifically views of its temporality and the limitations of formal rules, with which moral assessments can be in tension (as in Christina's case).

Both cases demonstrate participants' attention to fellow scientists and their sensibilities. All cited researchers locate practices of data sharing and their assessment within their professional world. In the case of the ALLSKY discussion in Transcript 7.1, Eddie seems to adopt a "reciprocity of perspectives" (Schütz 1962; 1964) with other scientists to formulate a reasonable critique of the collaboration board's suggestion. Henry delimits the community's boundary as including potential peer reviewers. The MUWAGS discussion in Transcript 7.2 identifies membership through considering comparable projects, whereas Christina's critique (in Transcripts 7.4 and 7.5) specifies ethical expectations of members' conduct. Thus, we witness in either case how members define their communities from within. We do not need to rely on what analysts claim. However, to grasp the moral issues informing these interactions we need more than transcripts of conversations and have to add ethnographic and contextual detail.

That "open access" and "open science" are moral matters has been widely acknowledged, with some authors arguing that these are "moral economies."[27] But these studies leave open how these "economies" are brought

[27] See, for example, Bacevic and Muellerleile (2018) as well as König et al. (2024).

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about and sustained by their members as "moral" affairs.[28] For examining this, the notion of status can be a useful tool. Robert Merton's (1973, Part 3) understanding of the "normative structure of science," including the norm of "communism" (that scientific knowledge is owned communally), is often invoked as anticipating the "open science movement" (Leonelli 2023, 13). Merton's view of norms has been rightly criticized, not least since "norms cannot fix how people apply them" (Barnes 2003, 128–129) – they are resources, much like the precedents that the conversationalists invoked earlier in this chapter. But Merton builds on an account of academic scientific communities as "status groups" (Weber 1978) that is more defensible. As Max Weber conceives of them, status groups are moral communities defined by their specific lifestyle and practices of honoring (Barnes 2003). If we examine these practices as interactional and subject to social accountabilities, we come to understand statuses as works-in-progress. Invoking precedents and conversational uses of translation and irony are means to explore, define, and challenge statuses while attending to ethical concerns.

Note that all references to statuses that I identified were bound to these scientists' academic discipline, astronomy. They were context-sensitive and entailed views of status incumbency that were mindful of a dataset's intended uses. Accounting practices are unavoidably context-sensitive (cf. Chapter 3). Universal demands for the open access to data sacrifice this context sensitivity. This matters not only when data users "scoop" data makers to their scientific results. Equally important for many scientists is the risk of attracting blame from other researchers when they use someone's published data wrongly, and the effort to assure to properly transmit one's knowledge through a dataset, as I examine in Chapter 8.

[28] To some anthropologists' dismay, moral economies are all too often conceived as collectives in which the moral is naively identified with the social (Hann 2010; Laidlaw 2014; Keane 2016). Moral economies are frequently invoked when contrasting a community's long-term good with individuals' short-term profit-seeking (Thompson 1991; Kohler 1994, 1999; Strasser 2019).

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