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# Practical Logic and Autism

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#### Introduction

At the beginning of the twenty-first century, contemporary social theory remains at a loss to articulate the relation between structure and agency in constituting social life. The paradigm shift towards constructivist perspectives brought a new vocabulary to social and cultural analysis, one which cast members as players in the game of life, actively manipulating symbols and behavioral principles to strategically manage the contingencies of fluid social situations. Decades after Garfinkel and Bourdieu presented their brilliant treatises on practice, however, we are still hovering around the notions of practical reasoning and practical logic and their relation to social order and "common culture," including categories, rules, common sense, and other "objective regularities" of local knowledge. In Bourdieu's writings, for example, we learn far more about what practical logic is *not* than what it is: "Practice has a logic which is *not* that of the logician" (1990a: 86). Indeed, we are cautioned against rigorous probing of practical logic, with emphasis on the supposition that the relation of members' habitus to fluid circumstances is inherently vague:

The habitus goes hand in glove with vagueness and indeterminacy. (Bourdieu 1990b: 77)

And there is every reason to think that as soon as he reflects on his practice, adopting a quasi-theoretical posture, the agent loses any chance of expressing the truth of his practice. (Bourdieu 1990a: 91)

Bourdieu argues that the vagueness of practical logic is a non-issue, for the beauty of practice-based paradigms is that practical sensemaking is a psychological activity that teeters between structure and agency. In this perspective, practical logic is in part an acquired, sociohistorically rooted sense of the immanent practice and in part a set of intuitions and improvisations generated on the spot in response to novel situations. Similarly, in Garfinkel's framework, practical reasoning involves members'

use of both "background expectancies as a scheme of interpretation" and ad hoc, contingent, artful methods for responding to "every exigency of organizationally situated conduct" (Garfinkel 1967: 36, 34).

For all the emphasis on practice as a fusion of orchestration and spontaneity, however, we know little about the interweaving of these tendencies in social life. Garfinkel and Bourdieu emphasize that sociocultural dispositions provide a tool kit of resources for social actors, but that these resources alone cannot account for temporally unfolding practical reasoning and practical action. We are left in the dark as to the specific role such a tool kit plays as social actors move through the complexities of practical worlds and as to what transpires when the experiential tool kit proves inadequate and social players are required to innovate strategies and courses of action or otherwise no longer evince a feel for the game.

This essay offers an outside-in perspective on the accomplishment of practical logic and the dynamics of structure and agency through an unusual path, namely an examination of social practices in which certain players have been diagnosed with autism. Face-to-face interaction is often anathema to persons with this disorder, and social practices can be challenging for them to apprehend, initiate, and sustain. Because these and other difficulties with sociality are its defining symptoms and because anthropologists have neglected to analyze this disorder in relation to the constitution of society, autism presents an ultimate, formidable frontier for the field of anthropology. Geertz has written that the anthropological attempt to capture the general features of social life of another people "is clearly a task at least as delicate, if a bit less magical, as putting oneself into someone else's skin . . . The trick is to figure out what the devil they think they are up to" (1983: 58). In line with phenomenologically oriented anthropologists like Geertz, the authors of the present study make no claim to reproduce the "native's point of view" of autism. We do, however, attempt to present "experience-near" autistic understandings of social practice that we captured in the course of following autistic children at home, school, and elsewhere with video cameras and wireless microphones. Our analysis draws upon manner and content of talk, gaze, demeanor, and actions of 16 children of normal intelligence diagnosed as either high-functioning autistic (HFA) or with Asperger Syndrome (AS), including sotto voce commentaries on unfolding situations at hand, especially perceived moments of confusion and failure in the face of practical expectations.

The present study applies the tools of anthropology to understand how these children with autism participate in social encounters that require fluid, contingent, practical strategies and behavior. In so doing, the study begins to unpack the relation between structure and agency/dispositions and practice. Autism refracts this relation in fascinating ways. For example, our ethnographic observations indicate that children with HFA or Asperger Syndrome have a heightened awareness of how mastery of certain social practices is critical to being perceived as a normal kid. This awareness is especially manifest at school when they strive but fail to meet some practical exigency or when their oddities are noticed by their unaffected classmates. For example, during a math test, Karl, a 9-year-old HFA boy, asks his aide for help, bemoaning that he "does not know anything." As she approaches, he sneaks a peak at the multiplication table on the wall and is reprimanded (Ochs 2002: 111, 112):

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(1)

Karl: ['Would you help me? I don't know aa-nny-thing'
[((turns to his aide, whispers))

Aide: [((comes over to Karl's seat, squats)) What?

Karl: [((looks at multiplication table on the wall and sees a possible answer))
It's thirty-six?

Aide: >You're not supposed to be lookin' at that (.)
[Look<
```

At this point, Karl articulates a complex social relation between the practice in which he is now engaged, the kind of person he is not and the kind of person he is, and the implications of these social categories for "being a kid":

```
Karl: [I don't like math
       [((turning to/away from aide))
      I am not a math person.
       .hh I am a robot person
       not a [math person.
Aide:
             You a: : Tre
Karl: Yes::!
      Okay (.) right no: w (.) you are a person doing a test (.) okay?
Karl: He is not a test °person anymore°
       (.)
      Eight
Aide: And you are [not supposed to be looking up on that cha: rt.
                   Two
      I am not good at being a ki-d.
Aide: You are good at everything you wanna be.
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A similar awareness of practical competence was displayed by 9-year-old Erin when her classmates ridiculed her for flapping her hands in the air, rocking back and forth, bobbing her head, and making loud rhythmic vocalizations on a play-ground bench (Ochs et al. 2001). The classmates marked her practice as odd with comments such as "What's your problem?" and "What the heck is she doing?" and half-smiles at one another. After these reactions, Erin ceased her jiggling, solicited their attention again, and when it was finally secured, reenacted the same behavior as a clown act. In redefining her practice as a humorous performance, Erin attempted to convince her classmates that she, like them, has normal control over her actions. Karl and Erin make evident in startling clarity philosopher Margaret Archer's dictum: "We do not make our personal identities under the circumstances of our own choosing. Our placement in society rebounds upon us, affecting the persons we become, but also and more forcefully influencing the social identities which we can achieve" (2000: 10).

What Karl and Erin and others like them make remarkable is that social practice is fundamental to identity formation in human consciousness. Although sociality presents numerous hurdles for them, autistic persons of normal intelligence are nonetheless able to reflect upon practices and identities, sometimes able to strategically accommodate to normative expectations (like Erin) and other times voicing frustration at their limitations (like Karl).

Autism indicates that certain facets of social practice are comfortably handled, while others stretch capabilities, suggesting that practical logic is not a homogeneous domain of competence (Ochs et al. 2004). These distinctions in turn illuminate what is foundational to performing social life and what poses greater cognitive and social challenges. Autistic interfaces with the world also clarify the power of structure over agency. For example, when children with autism are practical actors in the games of social life, the exercise of practical agency in novel situations may be thwarted by a strong autistic predilection for ritualization and structural regularity (Hughes 2001; Turner 1997; Wing and Gould 1979). If we consider structure to be Mohammed and agency to be the mountain, the mountain bends to Mohammed and structure rules supreme.

Moreover, the distinction between structure and agency requires some rethinking in light of how autistic children strategically transform social practices into exercises of listing, configuring, and permuting objective structures. That is, in addition to the unidirectional conversion of objective structure into contingent social practice, we find semi-inversions as well (i.e., partial retreats into structural algorithms). In contrast to the vague conversion of objective structures into practical logic as described by Bourdieu, the children at times baldly insert such structures into immanent social interactions. For example, recounting his first day of school to his mother, Adam, an 11-year-old boy with AS, sums up his music teacher's instructions: "Ink, ink for the practice report. Pencil for the music. Pencil not for the practice report, and ink not for the music," thus relating members of two paradigmatic sets (assignment set: practice report, music/writing media set: ink, pencil) according to a one-to-one correspondence algorithm and then relating them again in a one-to-one contrast (Solomon 2000).

Neither wholly irrelevant nor wholly relevant, such inserted structures are what we call proximally relevant to the social practice underway. The phenomenon of proximal relevance challenges strict structure—agency and structure—practice dichotomies: in the case of autistic actors, asserting information about objective structures and regularities is a practical strategy and a comfortable one at that; logical logic is practical logic. Such cases, in which rules, principles, taxonomies, and other structural domains of habitus are baldly deployed in autistic social practice, lend insight into the more subtle practical logic required of ordinary actors in translating, transposing, and otherwise generating systems of dispositions into situated practical behavior.

## THE ETHNOGRAPHY OF AUTISM PROJECT

Much of what we know about autism is drawn from elicited behaviors in structured experimental settings. Alternatively, the present corpus, collected under the direction of linguistic anthropologist Elinor Ochs and clinical psychologist Lisa Capps, includes not only experimental data but also extensive ethnographic observations of the everyday lives of 16 8–12-year-old children diagnosed with either HFA or AS. All the children were fully included in regular public school classrooms. To confirm diagnosis, researchers administered Autism Diagnostic Interview-Revised (ADI; Le Couteur et al. 1989) and the Autism Behavior Checklist (ABC; Krug et al. 1978). The children's abilities were assessed using the Wechsler Intelligence Scale

(WISC-III; Wechsler, 1992), and a series of theory of mind tasks (Baron-Cohen 1989; Baron-Cohen et al. 1985; Happé 1994b; Leslie and Frith 1988).

In addition, the children were observed and video recorded for up to a month at home and school, yielding a total corpus of over 320 hours of recorded data, and audio recorded in transit to and from school for a total of approximately 60 hours. Using remote wireless microphones, the researchers tracked the children at a distance in a range of social practices related to mealtimes, car rides, schoolwork, sports, and other recreational activities. Researchers also photographed quotidian environments in which the children routinely conducted their social life and interviewed parents about family history and the children's daily schedules and social networks.

While sociability is a central topic in psychological research on autism, it has been examined largely in terms of the achievement of intersubjectivity and interpersonal relationships between individuals. Although drawing upon this scholarship, our ethnographic study of autism and social life instead foregrounds how children with autism spectrum disorder function as members of social institutions such as families, schools, and peer groups. It analyzes their ability to both apprehend and construct social order and social practice in everyday environments.

#### AUTISTIC IMPAIRMENTS AND SOCIAL PRACTICE

Autism is a neurodevelopmental disorder that affects, by the most conservative estimates, 1 out of every 1,000 children (Castelli et al. 2002; Croen et al. 2002; Gillberg and Wing 1999). Approximately 75 percent of children with autism suffer from mental retardation, and about half never develop spoken language (Wing 1996; Wing and Attwood 1987). Autism is a spectrum disorder, with a range of severity encompassing the most profoundly affected non-verbal individuals at one end of the continuum and those with only subtle impairments at the other. The latter includes both high functioning individuals with autism (HFA) and those with AS.

Independently of the level of current functioning, children are given a diagnosis of autistic disorder if they have had a delay or anomaly in early language and in cognitive development (APA, 2000). If no such delay has been documented, the children receive the diagnosis of AS. This diagnostic differentiation can be problematic, however, because children with AS are usually diagnosed at an older age than children with autism, making it impossible to establish whether, in fact, their language development was proceeding normally (Landa 2000).

The hallmark of AS is an image of a "little professor" (Volkmar and Klin 2001: 84) incessantly talking in a loud, pedantic tone of voice about such unusual or esoteric topics of interest as rain drains or number encryption. Compared to children with HFA, those affected with AS have a social disability that, paradoxically, manifests in exaggerated reliance on language combined with limited awareness of conventions of its use. Thus, unlike children with HFA, who may appear socially withdrawn, children with AS are often garrulous, inexhaustible conversational partners, making bids for interaction in a persistent, repetitive, and forceful manner with little ability to interpret others' non-verbal communicative cues (Volkmar and Klin 2001).

Persons with an autism spectrum disorder are generally thought to have relatively intact grammatical ability but display pragmatic impairments in language use (Tager-Flusberg 2000). The children may appear, however, linguistically intact on the surface due to the "gestalt" pattern of language acquisition, which results in the use of memorized linguistic chunks (Prizant 1983; Landa 2000). Nevertheless, pragmatic impairments of children with autism spectrum disorders are indisputable. In the early stages of development, the children almost completely lack proto-declarative gestures (i.e., pointing to share an interest in an object) (Foster 1990; Happé 1994a). In later development, they have impaired use of deictic markers that shift meaning depending on the context of use, such as demonstratives and personal pronouns, which they often reverse (Bartok and Rutter 1974; Tager-Flusberg and Calkins 1990; Tager-Flusberg 1993, 2000).

Moreover, certain children with autism spectrum disorders have idiosyncratic use of repetition in conversation. They may echo utterances of little relevance that have been heard in another situation. Additionally, some children with autism spectrum disorders repeat questions or statements to maintain their conversational involvement in the absence of an ability to otherwise participate in conversation (Prizant and Wetherby 1987; Wetherby et al. 2000). HFA children may ask questions in a socially inappropriate, potentially offensive way (Landa 2000).

Furthermore, the children tend not to invite other interlocutors to engage in joint attention to objects (Kasari et al. 1990; Loveland and Landry 1986; Mundy et al. 1993), communicate only a relatively restricted range of interests (Mercier et al. 2000), and have an impaired ability to organize events and states in a coherent narrative (Bruner and Feldman 1993; Capps et al. 1992; Capps et al. 2000; Loveland and Tunali 1993; Tager-Flusberg 1996; Tager-Flusberg and Sullivan 1995). Children with autism also have been reported to make few contributions to ongoing conversation and have difficulty sustaining conversational topics (Tager-Flusberg and Anderson 1991; Tager-Flusberg 1996, 2000). Even HFA and AS adults have been noted to produce relatively incoherent written and spoken discourse that rambles and fails to consider the addressee's knowledge and perspective (Happé 1991). Alternatively, our research on children with autism spectrum disorders in everyday social interactions finds that children exhibit various degrees of pragmatic impairments and, moreover, that pragmatics itself is not a uniform domain of competence (Ochs et al. 2004).

For decades, researchers attempted to locate a core deficit of autism (Sigman and Capps 1997). The main candidates have included an impairment in (1) the drive for central coherence (i.e., the integration of parts into whole configurations); (2) the executive function (i.e., coordinating actions and mental states to solve a problem and reach a desired goal); and (3) theory of mind (i.e., interpreting others' psychological dispositions). All these impairments potentially interfere with the exercise of competent practical logic.

#### Central coherence

The Weakness of Central Coherence hypothesis argues that those with autism have a specific imbalance in information processing that inhibits their ability to integrate information into a coherent hierarchical organization (Frith 1989; Happé 1996; Plaisted

2000; Shah and Frith 1993). The drive for central coherence is over-powered by strong lower-level cohesive forces, which results in "an incoherent world of fragmented experience" (Frith 1989: 98). For example, autistic individuals excel at tasks involving attention to local information - such as copying block designs of little cubes or arranging shapes in rows and columns - but perform poorly in tasks requiring information processing at the global level - such as assembling a cardboard picture of a horse from its parts.

An understanding of how parts fit into conceptual wholes is central to both understanding cultural systems of classification and social order and their implementation in everyday social practice. Curiously, a number of the HFA and AS children in our study took delight in conceptual paradigms, listing and contrasting members of sets (Solomon 2000). In the excerpt below, for example, Mary, a 9-year-old HFA girl, first computes "please" and "thank you" as "magic words" then, inspired by her mother's explanation of "nicknames," she notes a candidate member ("golden state") of this category, which in turn elicits "California" as a category, which then evokes Mary's mentioning of the "golden poppy" as "the state flower for CaliFORnia":

(2)

Mary: Pass the crab!

((walks back to seat, Mom hands her the bowl)).

Mother: Please. Mary: Please.

Father: Mmm hmm.

Mary: [THANK you! [((perky tone)).

"Please" and "thank you" are called magic words Mary:

Mary: [Right, Mommy?

[((looking down))

Mother: Yup! That's kind of a nickname.

Mary: WHAT's a NICKNAME? Mother: You know, like a little fun name.

The golden state is a nickname state.

Mother: The [golden [state is a nickname for?

Mary: [State! [CaliFORnia!

[((enthusiastically))

Mother: Mmm hmm!

And (0.5 sec. pause), the golden poppy is (0.1 sec. pause) the state

flower for (0.1 sec. pause) CaliFORnia.

Father: [That's right! Mother: [That's right.

And I never saw a golden POPPY

In this dinner interaction, the family turns Mary's interest in categories into a game. At times, however, the children's structural flights were more off the point. Grasping the conveyed meaning of an interactional move entails part-whole understandings of the relation that move has to the larger body of actions, attitudes, and propositions unfolding in time and place.

Topic continuity, for example, involves attention not only to the immediately prior proposition but also to the relation of that proposition to the accumulation of thematically continuous propositions (Keenan [Ochs] and Schieffelin 1976; Sperber and Wilson 1986, 2002). In the excerpt that follows, for example, Erin, a 9-year-old HFA girl, links a narrative about her father's broken leg to an immediately prior reference to her father, but not to the global discourse topic of her father's family genealogy underway. Erin initiates this personal narrative in the middle of a family history interview that the researchers were conducting with Erin's mother (Solomon 2001):

(3)

Mother: His- his grandmother was- was from Italy

Researcher: Aha Mother: - and so

Researcher: His father's mother?

Mother: Yeah Researcher: Aha

Mother: Well actually probably both

Researcher: Both his parents, right, because the name is -And then (.) his father I believe is born .hmm here Mother:

in New York I mean

Erin:

Oh, and -

Mother: - and then they migrated out here

Erin: Oh, and - well - .hhh

> Dad was born in San Bernardino and about two months ago he brokefractured his leg on a skateboard . . .

((narrative continues))

Erin's first utterance "Dad was born in San Bernadino" can be seen as thematically coherent with her mother's immediately prior utterance about her husband's parents migrating from New York to "out here," meaning California. Erin's continuing discourse, however, leaps from the location and time frame of her father's birth to a skateboard accident he incurred just two months ago. Of course, interlocutors switch topics as a matter of course, but they generally mark such discourse as topically divergent. Instead, Erin emphasizes topical continuity by using the conjunction "and" to link her father's birthplace to his skateboard injury.

Discourse Topic 1 Father's Family History

"Dad was born in San Bernadino"

"and"

Discourse Topic 2

Father's Recent Skateboard Injury "about two months ago he brokefractured his leg on a skateboard"

As evidenced by this excerpt from Erin's narrative, the ability to integrate parts into coherent structures is central not only to introducing a narrative but also to recounting the narrative itself. Those with autism spectrum disorders find it challenging to recount a narrative of personal experience, in part because it entails organizing component events to form larger narrative episodes along a narrative trajectory that configures the plot of a story (Loveland et al. 1990; Solomon 2001).

#### **Executive function**

The Executive Function hypothesis argues that autistic impairments are related to an executive function disorder, which compromises problem solving abilities, particularly those required to plan a goal directed course of action amid changeable, relatively unstructured environmental circumstances (Hughes 2001; Russell 1997). This deficit is particularly consequential to practical competence, as much depends upon sizing up a situation and deploying strategies that are pertinent to projected social moves. As Bourdieu notes, "a player who is involved and caught up in the game adjusts not to what he sees but to what he fore-sees." (1990b: 81). The Executive Function hypothesis may offer a fruitful explanation for autistic difficulties in spontaneous narration, in that narrative plots have the structure of plans and entail the ability to causally link a complicating event to subsequent goal setting attempts, psychological responses, and consequences.

As part of their executive function impairment, persons with autism spectrum disorders have difficulty generating new and flexible responses to shifting situational demands. This ability to recognize socially significant variability in situations and adjust one's strategies for engagement accordingly is fundamental to exuding a feel for the game at hand. As noted earlier, persons with autism have a fondness, which can turn to obsessiveness, for constancy and regularity. They sometimes perseverate on a certain stimulus or prior problem solving strategy, even though the parameters of a situation have changed (Turner 1997). Their orientation to sameness also may lead autistic persons to over-regularize social situations, treating similar but distinct social moments as abiding by the same social rules. A HFA child in our study, for example, introduced himself to each member of his soccer team at not only the first practice but also every practice thereafter. And in the excerpt below, Jason, a 12-year-old HFA boy, reports to his parents at dinnertime his frustration that a strategy he used previously to handle a bully at school failed to work in an incident earlier that day:

(4)Tason: Actually (6.0 sec. pause) Actually (2.0 sec. pause) he pick on me- he picked on me today. Mother: Really? °Why°? Jason: I don't know So how you handled it? Father: Mother: Like what Jason? Father: How do you handle it? (1.0 sec pause)

Jason: I say "hello"-

((animated)) When I say "hello" to him

He says "AAAAH" He gets scared.

Father: Pretend Mother: [uh hmm Father: [uh hmm

(2.0 sec pause)

Mother: [It's OK, it's alright Jason

Jason: [But I

Then he walked away, So I wanted to do that

But it wo-

(.)

It worked in the first place but now it didn't.

# Theory of mind

The Theory of Mind hypothesis argues that autism impairs the ability to attribute mental states to others and even to themselves. Practical logic and practical action rely upon theory of mind to successfully infer from others' conduct and ideas what they are likely to be thinking and feeling and what is likely to be their next social move. In experimental settings, autistic children are often unable to infer others' beliefs and intentions, a phenomenon known as First Order Theory of Mind (Baron-Cohen 1989; Baron-Cohen et al. 1985). Even the most able HFA and AS children need to reach the verbal mental age of 9 years in order to pass the first order Theory of Mind tests passed by typically developing 3 to 4 year olds (Happé 1995). Typically, developing children make Second Order Theory of Mind inferences - about what one person (other than self) thinks another person thinks - at the age of 6, while only a few HFA individuals reach this ability sometime in their adult years (Baron-Cohen 2000). For example, while riding in the car, Sylvester, an 8-year-old HFA boy, and his mother see "two guys near the . . . railroad tracks with (.) what looks like a shotgun," and his mother later reports this to police over her cell phone. During the call Sylvester becomes increasingly nervous that the men will track them down, which is not a farfetched assumption for an 8 year old and one demanding second-order perspective-taking. But then, as his mother waits on the line with the police, Sylvester loses perspective on the gunmen when he fears that they may hear his mother talking, even though he and his mother have passed them by and are inside the car:

5)

Sylvester: Are they- are they parts of gangsters?

Do they hear you? (3.0 sec. pause)

Are you- do they hear you?

What is it?
What?

>What what what?<

Powerfully hermeneutic, the Theory of Mind hypothesis makes sense of much of young autistic children's communicative profile (e.g., language delay, lack of response

when called by name, diminished range of facial expression and gesture, diminished ability to initiate and maintain shared gaze and shared object of interest with a primary caregiver, echolalia). Theory of mind impairments also may account for older autistic children's and adults' difficulty recognizing the informational needs of their interactional partners, distinguishing between their own and others' point of view, and interpreting non-literal meanings such as sarcasm, metaphors, and indirect speech acts (Baron-Cohen 1988; Frith 1989; Happé 1991, 1994b, 1995; O'Neill and Happé 2000).

# Sources of Practical Competence

What happens when intelligent, regularity-loving, detail-oriented, literal-minded, and intersubjectively myopic persons with autism spectrum disorder venture forth in the buzzing world of social practices? Despite the long list of social impairments associated with autism and the examples of gaps and failures presented above, we were surprised at how well the children in our study managed practical arrangements (Ochs et al. 2004). Consider, for example, the age-appropriate responses made by Don, a 10-year-old HFA boy, in an interaction that focuses on his mother's announcement that he will not be allowed to bring arrows to school as part of his Native American Halloween costume:

(6)

Mother: What's the matter.

[((staring in front of him)) Don:

[Just thinking.

Mother: >What are you thinking about<

(2 sec. pause)

[((dreamy, smiling)) Don:

<Hallowe: en>

What? >What about Halloween.<

Don:

I w- I can't wait to be- to eh- to hold the-

bow and arrows a: ↓nd (.)

[((in a lower voice))

[be a Native American.

Mother: You know what?

Don: Hmm?

We're not gonna be able to take the arrows to school. Mother:

[((puts left hand to side, upset)) Don:

> Great (.)

> > Mo: m! It's [no: t fai: r

Mother:

Don

[((straightens Don's hair))

[You know what? (.)

You're not allowed to take (.)

any kind of v- violent weapon-thing to school!

Don: But Mommy I just saw pretend swo: rd

and a - pretend light saber!

Mother: Then their mommy and daddy weren't following the rules!

In the context of this informal social interaction, Don responds relevantly to his mother's queries and reasoning, ably stating and maintaining his moral position and providing a relevant counter-argument.

Why did most of the HFA and AS children in the study generally seem to navigate the flow of social exchanges? Two interrelated explanations are posited: the autistic achievement of practical logic is enhanced by (1) properties of the practical actors in the social practices observed and (2) properties of the social practices in which the actors are engaged.

Actor-based explanation

One possible source of the frequent social success of most of the HFA and AS children in the study lies in the relatively high intelligence of the children and the cooperation of generous interactional partners. Previous researchers have surmised that older children at the high-functioning end of the autism spectrum use their intelligence to strategize how to participate in social situations. Rather than acquiring social heuristics as a matter of course, these children are thought to "hack" out meanings conveyed in social situations (Frith et al. 1994). "Hacking" implies that the children work through stored algorithms to decipher the encrypted logic of messages conveyed in the course of social interaction. This view appears apt for some exchanges involving HFA and AS children. There is ample evidence, for example, that many of the HFA and AS children we observed did indeed frequently seek didactic explanations for what they did not understand about a social situation (Ochs et al. in press), as in excerpt (7) in which Erin cannot fathom the non-literal meaning of an idiom, a problem predicted by Happé (1991, 1995):

Mother: So(.) it's gonna be a fun day on Saturday.

Don't forget when you get home, wash your hands.

I don't want any illnesses breaking out between now and Saturday.

What if we get sick during (xxx) Sister:

and we don't even know it.

Mother: We'll cross that bridge when we get to it.

We're not gonna worry about that right now

Wha: : t bridge? Erin:

Mother: It's- it's an expression Erin.

Something that people say,

"we'll cross that bridge when we get to it."

That means that we will wait and see what happens first

And then we will deal with it.

There's no point worrying about something

that might not happen.

While queries of this sort abound, the fluidity of the children's responses in many everyday encounters with family members, classmates, and teachers suggests that they are not usually effortfully calculating or "hacking" out practical strategies. Rather, most of the time they appear to have internalized certain fundamentals of how to sustain the practical focus of attention. We propose that these practical fundamentals are building blocks of online social practical competence.

Another actor-based explanation may lie in the tendency of other participants, especially family members, to design their talk and conduct to be comprehensible and interesting to these children and to richly interpret the talk and conduct of the children. As illustrated in (1) and (3) above, these generous participants usually make certain they secure the child's attention, clarify possible misunderstandings, fill in missing information, and otherwise promote the child's social involvement.

# Practice-based explanations

Properties of the practical actors alone cannot account for the practical logic exercised by the children in this study. Practical functioning of children with autism spectrum disorders - and we suspect for all practical actors as well - depends centrally on certain fundamental properties of the social practices underway. Social practices that exhibit certain properties appear well within the grasp of autistic children of normal intelligence, while others, we suggest, are more challenging.

We began to analyze the conditions that afford more or less successful participation in social practices. Our observations led us to propose that first, success as practical agents varied in relation to two primary coordinates of social practice, and second, persons with autism benefit from the fuzzy constraints of coherence in everyday social practice, allowing their proximally relevant contributions to pass as roughly acceptable behavior. The coordinates of social practice impact how well members with autism spectrum disorders are able to strategically deploy sociocultural dispositions and schemata to "appreciate the meaning of a situation instantly, at a glance, in the heat of the action, and to produce at once the opportune response" (Bourdieu 1990a: 104).

Among the coordinates of import to practical competence we focus on those of (1) mode and (2) scope. The coordinate of mode considers two mutually constitutive but analytically distinct properties of social practice, namely practice as a flow of social actions and as a flow of propositions. Bourdieu's conceptualization of practical logic dwells upon the relation of habitus to the flow of social actions, while Garfinkel focuses on practical reasoning as the ethnomethodology through which members accomplish both common understanding and concerted social action. Bourdieu's discourse highlights expressions such as "conduct," "acts," "enactments," "exchange," "game," "strategy," and "style." Alternatively, Garfinkel's ethnomethodology provides a more proposition-rich account of social action; indeed, interpretation itself is a social action, a set of procedures that unpack the indexical meanings underlying "members' talk and conduct" (1967: 10-11).

The second coordinate of practice is the coordinate of scope. A participant in a social practice may proceed competently in relation to the immediately preceding and following local social moves, as when someone shakes an extended hand or produces a relevant response to a compliment. Yet successful practical logic may also entail surmising how these immediate moves are relevant to more extensive practical considerations.

The grid below displays a cline of practical competence. In relation to the coordinates of mode and scope, with "1" representing the greatest degree of competence and "4" representing the least, the HFA and AS children in the study exhibited greater practical competence in responding to the flow of actions than to the flow of propositions and greater success in more locally circumscribed than more extensive social practices.

Coordinates of social practice				
		Mode Actions	Propositions	
Scope	Local	1	2	
	Extended	3	4	

This grid specifies that the social fluency of the verbally able children with autism spectrum disorders resided primarily in their ability to act relevantly and generatively in response to locally prior and upcoming actions (1). Linking their predications to the propositional content of locally prior and anticipated utterances was somewhat more challenging (2). This was especially the case when interlocutors conveyed nonliteral meanings (Happé 1994b, 1995) and when the propositions concerned persons other than the autistic child or lay outside the current interests of the child. We noticed as well that when children became upset, they also might drift away from the local topical focus. It was considerably more challenging for the HFA and AS children to link their actions to their own and others' actions over a more extensive span of social interaction (3). As we shall see below, for example, one child had difficulty sustaining a dinner grace. As would be predicted by deficits related to central coherence, executive function, and theory of mind, the greatest difficulty for the children lay in grasping more global themes constructed across an extended series of utterances or relating an expressed proposition to an idea mentioned in the non-immediate past or projected to apply to a relatively distant unrealized time and place (4).

This hierarchy of coordinates and properties pertains not only to autism but also to practical logic as social competence more broadly. It suggests that not all facets of practical logic are equally accessible. It may be easiest for participants to master a feel for locally relevant social action, to draw from the cultural tool box of actions those optimal for the situational moment. Bourdieu's (1990a) metaphor of the tennis player who knows to approach the net to respond to an approaching ball and to direct it expertly in relation to the opponent fits this coordinate of practical logic. At the other extreme of practical logic, it may be most difficult to master a feel for the overall, extended body of propositions that participants are entertaining in an extensive social practice, to link current referents, ideas, and symbols to the past and future beyond the here-and-now.

#### A FEEL FOR ACTIONS

The flow of actions in social practices comprises recognizable, conventional gestures, physical demeanors, physical motion, speech acts, conversational turns and sequences, and a range of social activities, among other forms of conduct (Duranti 1997; Goodwin 1981; Goodwin and Duranti 1992; Levinson 2000; Ochs and Schieffelin 1989; Sacks 1992; Schegloff 1972; Searle 1969). Practical actors' presumptions

about relevant meanings conveyed in the course of social practice involve their understanding of felicity conditions of particular speech acts, and possible trajectories and expectations of moment-to-moment conversational moves in the construction of organized sequences of talk. This point is eloquently argued by Schegloff:

The structure of sequences will supply us as analysts with a crucial tool in understanding the coherence of stretches of talk that vary in sizes, from two utterances in consecutive turns to extremely long spates of talk. It will do so because sequences, both in minimal adjacency pair format and in multiply expanded forms, are a generic form-of organization for parties to talk-in-interaction. (Schegloff 1990: 72)

In this perspective, an utterance that may appear to be incoherent in relation to the propositional flow of discourse may be coherent in relation to unfolding sequences of conversational actions (Goodwin 1981, 1990; Heritage and Sorjonen 1994; Jefferson 1978, 1984; Sacks 1987; Schegloff 1990).

It is this property of social practice that seems most within the grasp of the verbally able HFA and AS children in our study, particularly those actions that are locally circumscribed (Ochs et al. 2004). They generally displayed sophistication in the felicity conditions of speech acts and principles of sequentially relevant discourse. The children, for example, recognized and provided sequentially normative responses to speech acts such as:

Prompts

Mary: Pass the crab!

((walks back to seat, Mom hands her the bowl))

Mother: Please. Mary: Please.

Announcements

Mother: You know what?

Don: Hamm?

Mother: We're not gonna be able to take the arrows to school!

[((puts left hand to side, upset)) Don:

Great

Proscriptions

((looks at multiplication table on the wall and sees a possible answer)) Karl:

Karl: It's thirty-six?

>You're not supposed to be lookin' at that (.) Aide:

Karl: [Look<

[I don't like math

Questions

Father: How do you handle it?

(1.0 sec pause)

Jason: I say "hello"

The children were particularly apt responding to questions. They provided sequentially relevant next moves to 85 percent of the questions directed to them by their

parents, but provided propositionally relevant answers to only 75 percent of the questions (Kremer-Sadlik 2001, 2004). Responding sequentially to questions is not simply a matter of identifying grammatical and phonological characteristics of these speech acts. The respondent also needs to discern the kind of question posed; for example, a basic request for information, a request to repair a problem in understanding or hearing, a request for confirmation, a rhetorical question, a test question, a prefacing question that projects another question to follow (Levinson 1983; Quirk et al. 1985; Schegloff 1980, 1990). Most of the HFA and AS children discerned the type of question being posed, indicating a capacity for fine-grained understanding of conversational sequences. For example, in excerpt (8), Jason relevantly responds both to his father's initial request for information and to a subsequent request for clarification:

(8)

Father: What's the name of the book?

Across Five Aprils Jason:

Father: What?

Jason: Across Five APRILS

Father: Okay

Jason displays awareness that he has been asked to repair his earlier response by the fact that he reformulates his response in a louder voice (indicated by capital letters).

The most able children in the study could handle more extensive social practices involving questions. In the interaction below, Jed, an 8-year-old boy with AS, is able to discern that his father poses a question that prefaces and projects a possible upcoming next question (i.e., a "pre-question") (Schegloff 1980):

Father: Jeddy, I have a question.

ToMORRow, you guys are serving LUNCH to the parents?

>Yeah, so?< Jed:

Well, what- what do yuh guys serve? Father:

> How do you (XXX)? How's your (XXX) now?

What do yuh -Am I gonna like it? What are you serving?

Jed: (Dessert), [What is it? Father: Stuff like that. Ted:

Salad, (0.2 sec. pause) and STUFF!

This exchange demands considerable practical logic. First, the father's preliminary assertion, "I have a question," does not mean that the question that the father has in mind is the very next question he is going to ask, and Jed does not take it to be so. Instead, Jed correctly understands that the next question is a preliminary query to a projected question that eventually follows (Schegloff 1980, 1990). His "Yeah, so?" both provides a relevant response to this query ("Yeah") and anticipates ("so?") the projected focal question. Unlike the researchers writing this essay, Jed does not have the foreknowledge of the question his father has in mind. Nonetheless, he has

a feel for the social action sequence in play and the perspective-taking ability to finely tune a relevant response. These and other examples in our corpus indicate that certain HFA and AS children have the perspective-taking capability to tailor relevant, coherent responses to nuanced practical actions.

### A FEEL FOR PROPOSITIONS

The flow of propositions includes the unfolding informational focus of attention, topics of concern, references, predications, and other facets of emerging, literal, and non-literal conveyed meanings that participants in a social practice continuously construct, interpret, and take into consideration in formulating moment-by-moment practical strategies (Brown and Yule 1983; Garfinkel 1967; Grice 1975; Halliday and Hasan 1976; Keenan [Ochs] and Schieffelin 1976; Kintsch and van Dijk 1978; Levinson 1983, 2000; Li and Thompson 1976; Sperber and Wilson 1986, 2002). Even verbally gifted autistic individuals sometimes experience difficulties constructing thematically coherent discourse and interpreting meanings underlying interlocutors' utterances. Using Sperber and Wilson's framework, Happé argues that autistic difficulties in discerning relevant meanings reside in an impaired ability to disambiguate an individual speaker's intentions (Happé 1991; Happé and Loth 2002; Sperber and Wilson 2002). We found as well that relative to their adeptness at providing relevant actions, maintaining the coherent flow of propositions could be problematic for the children we recorded. In excerpt (7), for example, Erin failed to grasp the non-literal meaning of "We'll cross that bridge when we come to it."

Excerpt (10) below illustrates a case of propositionally incoherent discourse that forms part of a relatively extended dinnertime prayer produced by Karl. Karl has some difficulty with the ritualized actional components of the genre, but even more difficulty with the improvised propositional content. When first asked to say the prayer, Karl abruptly introduces the mother of his imaginary friend Justin without explaining her relevance:

```
(10)
```

Mother: Karl let's try to say a prayer

>How 'bout some lights?<

((turns on the lights above the table))

Karl: Just- a: : - Justin's mom

Nonetheless, Karl's mother is able to provide an approving expansion:

Mother: [Okay .hh you can pray for Justin's mom [((looking in front her, nodding))

She waits for Karl to begin the prayer then provides a series of prompts:

(0.2 sec pause) Okay? Go ahead (.) "Dear-"↑

Dear Go: d Karl: I mean (.) alien God Father: [.hhhh [((chuckling))

Karl's shift to addressing "alien God" aligns with his decision to pray for alien acquaintances, which is greeted with humor by Karl's father. After this promising start, however, Karl's grace loses direction, referring to a series of disconnected events:

Alien God Karl: I thanked you for believing that Justhhhin's mom has heard a story a lo: ng↓ time a go Father: [> Put your - < [((gestures to Karl to put his hands together for prayer)) [((lowers eyes, in a lower voice, pensively)) Karl: [ and we have everything for- for- three years ago (.) and we have seen (.) [ everything like this [((opens hands to the table)) and we have promised him to believe them Your friend-Your - (.) J- Just God

While Karl maintains the semblance of prayer through genre features such as (1) calling out to the almighty ("Dear God"), (2) expression of thanksgiving ("I thanked you for believing ..."), (3) commitment ("and we have promised him to believe them"), and (4) his prayerful voice quality and bodily demeanor, the prayer contains incomplete, enigmatic predications and abrupt transitions from one clause or phrase to the next. Moreover, Karl ends the prayer inappropriately, first with reference to himself as supplicant ("Your friend"), then to the supernatural addressee of the prayer ("Your (.) J- Just God").

## PROXIMAL RELEVANCE

Radical incoherence such as exhibited in Karl's prayer, however, was rare in the spontaneous interactions involving HFA and AS children. The children's ability to maintain some semblance of coherence was aided by the fact that coherence is a relative rather than absolute concept. It is often, for example, difficult to discern whether an utterance is on-topic or off-topic, because topics tend to shade or transition step-wise from one to another (Schegloff and Sacks 1973). Social practices eschew tidy coherence and are loosely constructed by agents mobilizing fuzzy principles and semi-integrated schemata (Bourdieu 1990a: 102). Profiting by the fuzziness of situational coherence, the HFA and AS children routinely maintained social practices by expressing ideas that were *proximally relevant* (i.e., not quite in synch with the focal concern). Their proximally relevant remarks often followed statements, opinions, or emotional or ironic comments concerning persons other than themselves.

We have discerned two prevailing strategies that lead to proximal relevance. The first strategy is to make the interactional contribution locally relevant to what was just said or what just transpired, but not to the more extensive concern or enterprise under consideration. The second strategy is to shift the focus away from personal states and situations to topically relevant impersonal, objective cultural knowledge. Some children mixed the two strategies, proximally relating objective knowledge to a locally prior move. The strategies for achieving proximal relevance are rooted in autistic impairments. Specifically, the first strategy (i.e., make the interactional contribution locally relevant) may stem from the deficits in central coherence and executive function, while the second strategy (i.e., to shift the focus away from personal states) may originate in limited perspective-taking ability.

# Local scope and proximal relevance

A case of strategy one, a proximally relevant comment that somewhat misses the point of an extended sequence of propositions, is illustrated in example (3) when Erin introduced a narrative about her father's recent broken leg in the midst of a discussion about the family's distant family history. Her narrative was neither completely irrelevant nor completely relevant, but rather proximally relevant to the more global practical concerns. Similarly, in (11) below, Adam, an 11-year-old AS boy, was unable to grasp how his parents' comments related to a very long narrative he recounted to them about his grandmother's ("Yaya") horrified reaction to his first bike ride on a major street with his grandfather ("Papu"). Adam had detailed how his grandmother mercilessly and repeatedly grilled Papu and him. Adam's exaggerated pitch contours, vowel lengthening, and emphatic finger-shaking in reporting his grandmother's speech and gestures as well as his laughter and sarcastic repartee give the impression that his grandmother's response to his bike adventure was excessive. Below is a short excerpt from this narrative interaction:

```
(11)
Adam:
         She said-
         she savs -
         "This WAS the first time you were riding a bike.
         [WASN'T it, Philip?
         [((gesticulates with both hands))
         This WA: S isn't it?"
         [And - and -and then,
         [((change in voice, calmly))
         [and Papu goes -
         [((looks to the side, away from parents))
         says uh -
         says uh -
         ["WELL- Buît-"
         [((change of voice to imitate grandfather, calmly))
```

```
[You know how Yaya doesn't like that-
[((calm tone, back to own voice))
["JUST ANSWER THE QUESTION!"
[((waves hands, agitated))
["It's the FIRST time"
[((imitating grandmother's voice))
Father: [((laughs))
Mother: [((laughs))
```

Following Adam's reenactment of Yaya's reactions, Adam's mother comments that Yaya should have been a lawyer, specifically a district attorney; Adam's father suggests that she could have been a detective:

Mother: See she should have been a lawyer.

[((laughs))
((shakes finger knowingly))

Adam: ((starts to rock))
Father: [That's right
[((laughing))

Adam: = "It's the first time he rides a bike."

["Are you SU: : RE?"

[((rocking back and forth, continuously))

Father: It's true!
[She should have been

[((laughing))

Mother: [She really should have been.

She could have easily been a district attorney.

Father: Or a detective of [some type. And her skills - she had skills for that.

Mother: [That's where she missed her call –

she had ALL the skills to be it.

((Adam, who has been rocking up to this point, stops))

Veels Veels Fasily

Yeah. Yeah. Easily. [That's too bad. [((pensively))

At first, Adam seems oblivious to this discussion, then appears to concentrate: he stops quoting his grandmother's remarks, ceases rocking back and forth in his chair, then joins into his parents' characterization of his grandmother with his own proximally relevant comment:

Adam: [She FINDS things easily?

[((intently looking into mother's face))

Mother: Yeah.

She is - that's too [bad=

Adam: [De<u>TE</u>CTIVE, see? =

((begins rocking again))

Mother: = That's what she should have been=

((pensively, points finger in Adam's direction))

Adam: ((stretches arm across the table, points finger close to mother's face,

with excitement))
[=A DE-TECT-IVE!=

[((waves hands, very excited, speaking abruptly))

PRACTICAL LO

Mother: =A district attorney or a detective.=

Adam: She can find things EA: Sily you know!

Mother: Uhu

Adam: An-an-anyway - so - uh.

((leans forward, in a low voice conspiratorially,

looking at mother))

She looks for bargains (in the supermarket).

In this social exchange, Adam was unable to relate the social roles of lawyer, district attorney, and detective to his own extended recounting of his grandmother's ceaseless and unyielding interrogation of those suspected of wrongdoing. Instead, he proximally relates being a detective to "she FINDS things easily" and "she looks for bargains (in the supermarket)," which, while not unrelated to finding informational clues and an agreed-upon predilection of Yaya, misses the main point of his parents' commentary. It may well be that Adam is not aware that detectives routinely interrogate their suspects, but it is also the case that Adam does not draw upon his own narrative discourse to construe the conveyed meaning of his parents' comments.

# Objective knowledge and proximal relevance

A hallmark strategy of the HFA and AS children was to draw the interlocutor's attention to objective domains of knowledge more or less relevant to the topical talk underway. This strategy differs from given notions of how structure and agency relate to one another, for in these cases the autistic child as practical agent not only draws upon the cultural tool box of knowledge domains to meet the exigencies of the situation, but also converts the situation to focus on these objective domains of knowledge. While those unaffected by autism also at times assert cultural knowledge, this possibility coexists with a broader range of practical strategies for responding to social discourse than are available to verbally able persons with this disorder. For example, Mary, a child with a verbal IQ in the low normal range (80) and an inability to pass the First Order Theory of Mind experimental task, was highly reliant upon her use of objective knowledge as a means of participating in a proximally relevant way in the ongoing conversation. Recall that in excerpt (2) she identified "please" and "thank you" as "magic words," then "golden state" as a "nickname," then "golden poppy" as California's state flower. In excerpt (12) below, Sylvester, who has a higher verbal IQ (97) and passed First Order but not Second Order Theory of Mind tasks, incorporates proximally relevant knowledge domains at first subtly, then explicitly. Sylvester draws attention to depersonalized, objective knowledge in responding to his mother's personal, affective comment about it being a long morning as they are riding in the car one day in June:

(12)

Mother: Sylvester?

"Thank God".
((sighs))

It's a long morning, isn't it?

Sylvester:

mmhm

((2.0 sec pause))

Long morning and short night.

Mother: What's that mean?

((10.5 sec pause))

Sylvester: Mommy, in the summer, there's long days and short nights.

Mother: [Oh yeah?

[((yawning))
Sylvester: **Yeah.** 

Mother: What about the winter?

Sylvester: There are short days and long nights.

Mother: I like that.

Preceded by the softly spoken "Thank God" and accompanied by a sigh, Mother's utterance, "It's a long morning, isn't it?" conveys a negative evaluation of the morning, a metaphor that notes how "long" it seems, a morning that feels like it will never end. Given autistic difficulties in interpreting non-literal meanings and others' emotional states (Frith 1989; Happé 1994b), this type of reflection presents a challenge to Sylvester. After concurring with his mother ("mmhm"), he repeats the topic of "long morning" but takes it in a slightly different direction, seeming to interpret it chronometrically and contrasting it with "short night." Indeed, his proposition characterizes the length of days and nights at the time of year (June) in which Sylvester is speaking. This proposition then invokes an objective discussion of seasonal changes in length of days and nights. Is Sylvester's utterance "Long morning and short night" irrelevant vis-à-vis his mother's prior comment? This attribution is too strong. Rather, Sylvester's utterance is proximally relevant.

Sylvester and Mary create proximal relevance by focusing on cultural categories. Some children enjoyed contrasting alternative members of paradigms (Solomon 2000). Adam, for example, repeatedly noted which writing tools a teacher did and did not want the students to use. In addition, the children would provide dictionary meanings of relevant concepts, elaborate the structural components of topically related situational schemata, and state social rules regulating the social practice at hand. The detail and preponderance of these proximally relevant structural noticings contribute to the "odd" and "rambling" character of some autistic discourse and the profiling of some of the children as little professors spouting off lectures concerning some domain of expertise (Happé, 1991; Volkmar and Klin, 2001). The social exchanges in which this practical strategy takes hold seem to drift into pockets of structural minutiae.

#### Conclusion

This essay proposes that autism and social practice are mutually illuminative. Refracting social practice with the prism of autism, we have discerned that practical logic applies to the flow of local and extended actions and propositions. While the two are complexly intertwined, the generation of situationally apt practical actions – especially locally integrated actions – may be more accessible, more easily mastered, and in this sense more basic to practical logic than the generation of relevant propositions that build social practices.

We have also proposed that autism reconfigures the relation of objective structure and practical agency. When HFA and AS children bring objective cultural knowledge as a proximally relevant strategy to bear on current concerns, they illustrate with

great clarity the enormous pull that structure exerts on practical improvisation. One way of analyzing this communicative phenomenon is to view HFA and AS children as strategically inverting right then and there the practical logic of immanent social exigencies into the logical logic of patterned objective knowledge, reversing the default directionality of the logic of objective structures transformed into practical logic required for on-the-spot situational exigencies. Yet another interpretation, however, is the following: the autistic proclivity for proximally relevant taxonomies, schemata, and rules in everyday social exchanges may actually confound the dichotomy between the atemporal logic of objective structures and temporally situated practical logic. The dissolution of boundaries is rooted in the paradoxical status of the autistic focus on objective structures in social practice as at once a manifestation of logical logic and practical logic and as both a step away from and a step within the flow of social practice. When Sylvester, for example, comments "Long morning and short night" after his mother's plaintive "It's a long morning, isn't it," he simultaneously constructs a logic of objective regularities and a practical logic suited to the extant situated practice in which he is engaged as a player.

Using social practice as a lens to illuminate autism, we have learned that children with autism spectrum disorders have the capacity to be social agents who exercise practical reasoning. The HFA and AS children in this study meet the criteria of practical agents, in that they are able to display a "practical sense that 'selects' certain objects or actions . . . in relation to the matter in hand'" (Bourdieu 1990a: 89–90). Our study of the children's ability to effectively engage in local sequences of conversational practice indicate that they have considerable social perspective-taking when lodged in reasonable understandings of members' conversational moves (Ochs et al. in press).

Yet the children in this study were humbled by many of the practical demands imposed on them. They sometimes voiced confusion or frustration or tried to cover up their practical ineptitudes. In many situations they maintained their status as practical players by sticking to immediate considerations and shifting the personal drift of the social exchange towards discussion of objective structures. We invite future researchers to apply the practical coordinates proposed in this essay to discern forms of expertise called for in being not just a player but a *good* player in the games and dramas that inform our human ways of practicing life.

# Transcription Conventions (adapted from Atkinson and Heritage 1984)

self-interruption.

}	Indicates rising intonation as a syllable or word ends.
<b>↑</b>	Indicates a rising intonation, usually in the middle of a word.
,	Indicates "continuing" intonation, not necessarily a clause
	boundary.
:::	Indicate stretching of the preceding sound, proportional to the number of colons.
-	A hyphen after a word or a part of a word indicates a cut-off or

Indicates a falling, or final, intonation contour.

<u>wo</u> rd	Indicates some form of stress or emphasis on the underlined item.
·(( ))	Double parentheses enclose transcriber's comments.
()	Single parentheses indicate that something is being said, but it is
• •	unintelligible.
(1.2 sec. pause)	Numbers in parentheses indicate pauses in tenths of a second.
(.)	A dot in parentheses indicates a "micropause," hearable but not
` '	readily measurable.
ſ	Separate left square brackets, one above the other on two success-
-	ive lines with utterances by different speakers, indicates a point of
	overlap onset; also, simultaneous verbal and non-verbal behavior
	of one speaker.
[]	Several lines omitted in the transcript.
WORD	Indicates increased voice volume (loudness).
Word	Indicates relevance to the discussion.

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