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Kant on Action and Knowledge¹

by Jens Saugstad, Oslo

I

The term "action" undoubtedly plays a fundamental role in Kant's epistemology. *Kritik der reinen Vernunft*² is full of references to action, and the central term "Synthesis" is Kant's general name for *Verstandeshandlungen*, actions through which the manifold is combined in intuitions and judgments (B 130, B 141 – 142, B 145, B 162 n). The problem is how to interpret these appeals to action.

According to traditional views, Kant is concerned with various kinds of *inner* acts. There appear to be two major versions of internalist interpretations: on the one hand, that *syntheses* are familiar mental acts, like calculating silently in the head; on the other, that they are some kind of unconscious activity which is neither mental, in the ordinary sense, nor manifest. Either way Kantianism is made an easy prey to Wittgenstein's devastating criticism of internalism.

Here I shall propose an alternative that promises to clear Kant of such charges: the externalist interpretation. On this reading, Kant's position is that human knowledge depends, ultimately, upon our ability to perform a fixed set of *overt* actions essentially involving the movement of the human body. I defend the idea for only a limited, but central part of Kant's system: the figurative and successive syntheses of productive imagination, some familiar geometrical and arithmetical concepts, and the intuitions corresponding to those concepts (B 151, B 204).

Consider the possession of simple geometrical predicates, e. g. "round". The idea is basically as follows: a person has the concept 'round' only if he has acquired the *ability* (a) to produce a public representation of roundness by means of overt action, e. g. by constructing a circle on paper, and (b) to apply the term in judgments based on overt actions in which perceived objects are determined with respect to roundness through a public representation of the sort described under (a), e. g. by comparing the circumference of a coffee-cup with a self-produced circle.

My choice of topic is dictated by methodological considerations: while the doctrine of productive imagination can be presented by way of examples alone,

¹ Many people deserve thanks for helpful criticism, but special thanks are due to Keith Brown, Dagfinn Føllesdal, Alastair Hannay, Frode Kjosavik, Viggo Rossvær and Jon Wetlesen.

² Abbreviated as *Kr. d. r. V.*; all references in the main text are to the A or B edition of this work. References to other works by Kant are to both the Weischedel edition (W) and the Akademie edition (Ak), quotations from (W).

arguments for transcendental principles require more, viz. metaphysical and transcendental deductions. The former, presentation *in concreto*, is in my view a necessary preparation for understanding the latter, presentation *in abstracto* (cf. A XVII – XVIII, B 241 – 242, B 762). Hence, Kant's arguments for transcendental principles cannot be evaluated within the frame of approach adopted in this paper.

But for the sake of perspective, allow me merely to indicate what externalism makes of some central notions involved in these arguments: the transcendental subject is a corporeal agent with the ability to perform the overt actions necessary for the judgment of independently existing objects and their relations; pure self-consciousness is his ability to express what he does in words, e. g. "I construct a circle"; the categories are fundamental ontological concepts whose subjective basis is the overt rule-following that makes objective judgments possible; and even the pure intuitions of space and time, although not themselves actions, are spatial and temporal representations displayed for the senses by means of elementary ostensive actions, like pointing to the right and left, and waving a flag when runners cross the finishing line.

If externalism could be shown to bear on the texts, Kant would have to be credited with anticipating Wittgenstein's central idea, viz., that to understand a language is to master a behavioural technique.³ Indeed, Kant could turn out to be the major competitor to Wittgenstein: for while Wittgenstein advocates a plurality of loosely connected language-games, Kant argues that (theoretical) reason is a fixed system of organically interrelated principles of knowledge (B XXIII and B XXXVII – XXXVIII). On the proposed view, Kant's system should be construed as a set of epistemological principles based upon a culturally invariant core of interdependent behavioural techniques: simple skills which all human beings must necessarily acquire in order to pass judgments on the observable world.

Against this it might be objected that the formal conditions of experience are presuppositions of, and so cannot be formed through, learning behavioural techniques. The objection fails: Kant says explicitly that absolutely all representations, including the form of things in space and time and the transcendental concepts of the understanding, are acquired.⁴ Externalism seems to make best sense of this crucial textual fact, for it is hard to see that mental acts can be learned altogether independently of overt actions, and even harder to see, that the unconscious activity of the other version of internalism can be acquired.

At this point I must warn the reader not to confuse my proposal with behaviourism. Behaviourism asserts the naturalist idea that human actions are mere events, but this is not at all implied by externalism, which is perfectly compatible with Kant's doctrine that man, partly a phenomenon, is also *intelligible*, "weil die Handlung desselben gar nicht zur Rezeptivität der Sinnlichkeit gezählt werden kann"

³ Wittgenstein, *Philosophische Untersuchungen*, Frankfurt am Main 1971, # 199.

⁴ *Über eine Entdeckung, nach der alle neue Kritik der reinen Vernunft durch eine ältere entbehrlich gemacht werden soll*, pages (W) BA 68 – 71/(Ak) 221 – 223.

(B 574–575). Actually, externalism appears to be the only way open for a defence of Kant's anti-naturalist idea that human agency lies beyond the limits of causal experience. For this defence can only be sustained, I think, if a critical investigation of theoretical reason ascertains, *inter alia*, that the performance of overt actions through which material objects are manipulated according to rules, is a necessary condition for empirical causal judgment.⁵

II

In spite of its unmistakable Kantian motivation, the externalist interpretation represents a radical break with the tradition; so obviously I must present solid supporting evidence. The main criteria of interpretational truth are the extent to which the interpretation (a) renders the interpreted position philosophically sound, and (b) fits the textual evidence. I shall argue that externalism compares favourably with both: in contrast to internalist views, it makes sense of Kant's Copernican revolution and matches well with the texts.

There are indeed numerous passages attributing an epistemic keyrole to overt actions, for example: "Um aber irgend etwas im Raume zu erkennen, z. B. eine Linie, muß ich sie *ziehen*, und also eine bestimmte Verbindung des gegebenen Mannigfaltigen synthetisch zu Stande bringen, so, daß die Einheit dieser Handlung zugleich die Einheit des Bewußtseins (im Begriffe einer Linie) ist, und dadurch allererst ein Objekt (ein bestimmter Raum) erkannt wird" (B 137–138).

On the straightforward, literal interpretation, drawing a line is an overt action, and Kant can plausibly be read as explaining knowledge, the creation of a synthetic unity in the manifold, and the unity of consciousness, in terms of overt line-drawing. The detailed exegesis of the passage belongs to the discussion of the synthetic unity of pure apperception, which lies beyond the scope of this paper. But the mere fact that drawing a line, which is ordinarily associated with an overt action, occupies such a prominent position, certainly speaks for the externalist interpretation. Unfortunately, the tradition has, to some extent, immunized itself to textual falsification through the often tacit attitude that in such examples appeals to overt actions serve merely as metaphors for mental or other kinds of underlying, inner acts.⁶ In this situation I shall have to focus upon central passages that cannot easily be reconciled with internalism.

⁵ "Das Schema der Ursache und der Kausalität eines Dinges überhaupt ist das Reale, worauf, wenn es nach Belieben gesetzt wird, jederzeit etwas anders folgt" (*Kr. d. r. V.* B 183). I cannot argue the point here, but it seems plausible that positing the real *nach Belieben*, so that something else always follows, is to manipulate material objects according to rules. Roughly, deliberately producing sequences of events creates models through which perceived events existing independently of our manipulations, are judged as cause and effect.

⁶ See for instance Richard Aquila, *Imagination as a "Medium" in the Critique of Pure Reason*, *The Monist*, Vol. 72, No. 2, 1989, page 216.

In § 24 of the transcendental deduction of the categories Kant introduces the term “Bewegung, als Handlung des Subjekts” in connection with four examples illustrating his doctrine that the understanding determines inner sense through the exercise of the so-called “transzendente Handlung der Einbildungskraft”:

Dieses nehmen wir auch jederzeit in uns wahr. Wir können uns keine Linie denken, ohne sie in Gedanken zu *ziehen*, keinen Zirkel denken, ohne ihn zu *beschreiben*, die drei Abmessungen des Raumes gar nicht vorstellen, ohne aus demselben Punkte drei Linien senkrecht auf einander zu *setzen*, und selbst die Zeit nicht, ohne, indem wir im *Ziehen* einer geraden Linie (die die äußerlich figürliche Vorstellung der Zeit sein soll) bloß auf die Handlung der Synthesis des Mannigfaltigen, dadurch wir den inneren Sinn sukzessiv bestimmen, und dadurch auf die Sukzession dieser Bestimmung in demselben, Acht haben. Bewegung, als Handlung des Subjekts (nicht als Bestimmung eines Objekts), folglich die Synthesis des Mannigfaltigen im Raume, wenn wir von diesem abstrahieren und bloß auf die Handlung Acht haben, dadurch wir den *inneren Sinn* seiner Form gemäß bestimmen, bringt sogar den Begriff der Sukzession zuerst hervor (B 154 – 155).

It would be premature to venture upon Kant’s notoriously difficult doctrine of time and inner sense at this early stage, and I shall have to postpone this issue to future papers. Nevertheless, it should be possible to answer our exegetical question without entering into these difficulties, simply by focusing narrowly on what Kant says.

The question is what kind of actions Kant here classifies as transcendental actions of productive imagination. Does he mean that drawing a line, describing a circle, placing lines to form a three-dimensional coordinate-system, and drawing a straight line that represents time are familiar *mental acts*, some other kinds of *inner acts*, or *overt actions* through which I produce physical representations, e. g. by drawing lines on a sheet of paper? The first example clearly suggests a mentalist reading, the second and the third seem neutral between mentalism and externalism, while the fourth points in the direction of externalism, since drawing a straight line is said to be the *external* figurative representation of time.⁷ Still, one could take the position that Kant merely refers to the inner, mental representation of an external line.

But let us now turn to the expression “Bewegung, als Handlung des Subjekts”. I want to argue that *this expression* supplies hard evidence for my claim that “die transzendente Handlung der Einbildungskraft”, in the final analysis, refers to overt actions essentially involving the movement of our limbs. Presumably, nobody would deny that “Bewegung, als Handlung des Subjekts”, considered in and by itself, could plausibly refer to overt actions. Applied to Kant’s example, “Bewegung” would then refer to the bodily motion of the hand (or some other bodily motion, in case the agent is handicapped), and “Handlung des Subjekts” to the agent’s overt action of drawing a line.

⁷ Kant’s definition of *Einbildungskraft* on page B 151 covers the production of figures on e. g. a blank sheet of paper: “Einbildungskraft ist das Vermögen, einen Gegenstand auch ohne dessen Gegenwart in der Anschauung vorzustellen.”

The externalist interpretation is confirmed by the footnote to the passage where Kant explains the distinction in the main text between motion, as the action of the subject, and motion, as the determination of an object:

Bewegung eines *Objekts* im Raume gehört nicht in eine reine Wissenschaft, folglich auch nicht in die Geometrie; weil, daß etwas beweglich sei, nicht a priori, sondern nur durch Erfahrung erkannt werden kann. Aber Bewegung, als *Beschreibung* eines Raumes, ist ein reiner Aktus der sukzessiven Synthesis des Mannigfaltigen in der äußeren Anschauung überhaupt durch produktive Einbildungskraft, und gehört nicht allein zur Geometrie, sondern sogar zur Transzendentalphilosophie (B 155 n).

While the motion of an object in space can only be known through experience, motion as *description* of a space is a pure act of the successive synthesis of the manifold in outer intuition in general. Read in context with the previous passage, the text allows only two possibilities: either that "Bewegung, als *Beschreibung* eines Raumes" refers to a mental act or to an overt action.⁸ Three arguments confirm the externalist reading.

First, Kant wouldn't have emphasized the distinction between the motion of an object in space and the motion which is a description of a space, unless he believed it easily overlooked. Now, it seems to me that there is a standing temptation to reduce the overt actions of an agent, such as drawing a line or a circle, to the level of moving physical objects, such as planetary motions, since they are on the same level in *one* respect: they can both be made the object of experience. Obviously, the motion of the agent's hand can be judged empirically, e. g. in physicalist terms, and in *this* respect, an overt human action is fundamentally like the motions of physical objects. There is, on the other hand, no comparable danger that a reader would confuse a mental act with the motion of a physical object in space. Thus, the footnote would lose its point on anything but the externalist interpretation.

Second, Kant would hardly have referred to mental acts as motions. As Kant understands the term elsewhere, a motion is a change of location in space (B 48 – 49), while in his view the mental, as belonging to the inner, is non-spatial (B 50). Thus to Kant an overt action is a motion in the ordinary sense, while a mental act is not (although it might *represent* one).

Third, Kant is of course right that there is a fundamental difference between the motion of a physical object in space and the bodily motion involved in the description of a space: while both motions are observable, only the latter is part of an action performed by a human agent.⁹ The expression "reiner Aktus", therefore, must be

⁸ Michael Friedman believes "[t]hat we are here dealing with the motion of a mathematical point ..." This is implausible, for a mathematical point is hardly a subject in the sense of "Bewegung, als Handlung des Subjekts". Friedman, *Kant on Concepts and Intuitions in the Mathematical Science*, Synthese, Vol. 84, No. 2, 1990, note 57, page 255.

⁹ Kant's point here is merely a reminder of *the fact* that we do make this distinction, not an account of *how* it is made. Although the latter is notoriously difficult, we can certainly appreciate the fact even in the absence of an adequate philosophical account. The full Kantian account belongs to moral philosophy, but part of it is the doctrine mentioned on

meant to emphasize that the overt human action, as opposed to the motion of a physical object in space, is something done, a performance.¹⁰

A reader overlooking Kant's distinction is prone to believe that the involvement of the body in the conditions of experience threatens to contaminate the purity of the transcendental; that the conditions of experience are reduced to the level of objects of experience. Moreover, since the mental, for Kant, is the object of psychological experience, this line of reasoning leads to postulating inner, "transcendental" activities underlying both overt actions and mental acts.

Friedrich Kaulbach appears to be representative. He contends that the description of a space is not "eine empirische Leistung der zeichnenden Hand: Vielmehr ... es ist gleichsam eine *transzendente Hand*, welche die transzendente Bewegung des Beschreibens, des "Ziehens", des "Verzeichnens" leistet ... [D]ie transzendente Hand [hat] die Figürlichkeit aller Figuren ... immer schon vor aller empirischen Einzelvorstellungen beschrieben" (emphasis added).¹¹ But the quoted passages give no support to this interpretation; nor is it a philosophically sound alternative to mentalism.¹² While mental acts certainly exist and play important parts in our lives, the queer inner acts underlying overt actions and mental acts (and to which the transcendental philosopher supposedly has privileged access), are figments of Kant-research.

I conclude that Kant's expressions "Bewegung, als Handlung des Subjekts" and "Bewegung, als *Beschreibung* eines Raumes" refer to the bodily motions involved in familiar, overt actions through which we produce physical figures. Since Kant explicitly says that they belong to geometry and transcendental philosophy, the passage offers hard textual evidence for my interpretation.

How can we reconcile this conclusion with Kant's frequent appeals to mental acts and heavy reliance on cognitive terms? Not only does the first example on page B 154 and others invite mentalist interpretations (cf. B 203), but cognitive terms like "consciousness", "thought" and "I think" are essential to his arguments.

pages B 573 – 574 in *Kr. d. r. V.*, that human actions display certain *Sinnliche Zeichen* through which they are judged according to other standards than physical objects. For illustration, think of an uppercut; while it can be described in physicalist terms, an uppercut has behavioural characteristics that play a crucial role in our judgment that it was *done* by this or that person, and not merely a physical event or a reflex that occurred.

¹⁰ Kant applies the term "Handlung" also to non-human, physical motions belonging to the nexus of empirical causality (B 249 – 254, B 571 – 572). Thus, the term "reiner Aktus" seems to anticipate Kant's doctrine of intelligible causality and transcendental freedom: that human actions, *qua* performances, are intelligible, spontaneous first causes (B 472 – 483, B 560 – 565, B 574 – 575). On my reading, the intelligible, is not a realm behind and separate from the manifest action, but its performance-aspect. This is in line with Kant's definition of the intelligible: "Ich nenne dasjenige an einem Gegenstande der Sinne, was selbst nicht Erscheinung ist, *intelligibel*" (B 566).

¹¹ Friedrich Kaulbach, *Schema, Bild und Modell nach den Voraussetzungen des Kantischen Denkens*, in Gerold Prauss (ed.), *Kant. Zur Deutung seiner Theorie von Erkennen und Handeln*, Köln 1973, page 108.

¹² A representative mentalist interpretation is Jonathan Bennett, *Kant's Analytic*, Cambridge 1966.

Mental acts (and images) are highly useful in the crafts, the arts and the sciences; human beings engage in inner monologues, sing silently, act on mental plans and imagine things for the inner eye. But we also use cognitive terms about overt behaviour: we say of an agent e. g. that he thought he should turn to the left, although we do not necessarily mean that he had a mental image, performed a mental act, or engaged in an inner monologue at the time he had the thought, or, in another case, that he is thinking loud.

The upshot of my exegesis is that Kant recognizes that although (a) mental acts are thoughts, (b) cognitive terms also have legitimate externalist uses.¹³ Of the two he regards the latter as fundamental, for the consequence of mentalist interpretations, to which the production and application of external representations form no integral part, is that the external world becomes inaccessible to knowledge. But that clearly contradicts Kant's insistence upon the objective validity of knowledge (B 44, B 141, B 168), and his outrage at the "Skandal der Philosophie und allgemeinen Menschenvernunft, das Dasein der Dinge außer uns ... bloß auf Glauben annehmen zu müssen" (B XXXIX n).

III

Readers of Kant tend to get the impression that, according to Kant, experience is the outcome of some kind of quasi-mechanical molding or structuring of chaotic sense-impressions that are "stretched out" into spatiotemporal representations by the forms of sensibility and connected into "objects" by the synthesizing activity of the understanding.¹⁴ The quasi-mechanical interpretation here comes naturally to mind; but I believe it owes more to the commonsense presuppositions that we all tend to project upon the texts than to the texts themselves. I have mentioned mentalism as one source of distortion; another is sensualism. The sensualist conception of experience has a natural appeal because there is a feature of experience itself that constantly deludes us into forgetting the crucial role of action: *the fact that we can experience without doing anything*. What we tend to forget is that while we do not always exercise it, we have the acquired *ability* to act (even though e. g. paralysis may block its overt exercise).

¹³ Compare with his thought-experiment: "Es könnte wohl sein: daß auf irgend einem Planeten vernünftige Wesen wären, die nicht anders als laut denken könnten, ..." *Anthropologie in pragmatischer Hinsicht*, page (W) B 331/(Ak) 332.

¹⁴ Richard Rorty criticized Kant for basing his epistemology on a quasi-mechanical conception of knowledge. Rorty, *Philosophy and the Mirror of Nature*, New Jersey 1980. The externalist interpretation effectively neutralizes Rorty's charges against Kant, but I believe he has a valid point against traditional interpretations. A pronounced quasi-mechanical interpretation is C. D. Broad, *Kant. An Introduction*, Cambridge 1978, but the perhaps most elaborate attempt to fit the idea to Kant's texts is Erich Adickes, *Kants Lehre von der doppelten Affection unseres Ich als Schlüssel zu seiner Erkenntnistheorie*, Tübingen 1929, and *Kant und das Ding an sich*, Berlin 1924.

To combat our propensity for quasi-mechanical interpretations we need simple examples with which everybody can identify, examples that exhibit how overt action relates to experience. Kant reports that he removed many of his examples originally given in a first draft (A XVIII); a decision that has, in my view, proven disastrous. To make amends for this shortcoming commentators should supply adequate, new examples as well as emphasizing those that Kant has left us.

The familiar activity of measuring length serves as a suitable model for the Kantian conception of experience. The adequacy of the example is confirmed by the fact that Kant explicitly refers to measurement as a synthesis ("Messung, d. i. die sukzessive Synthesis", B 456 n). Suppose I want to fix a skirting-board along the bottom of the wall of my house. To find out how long a plank to buy, I must measure the length of that wall. For this purpose I place a ruler of some standard, e. g. a metre stick, successively along the bottom line from one end of the wall to the other as I mark each successive replacement, e. g. by holding my thumb against the wall, and close by marking, conversely, the other end of the wall upon the metre stick, e. g. by the grip of my fingers. The length of the wall is determined by the number of times I had to place the metre stick and I express the result in an empirical judgment, e. g. "the wall is 10½ metres long". A skilled man could judge the length by eye, but normally he would be capable of performing a physical measurement to check his visual estimate. Since the execution of a measurement is an acquired behavioural skill, like swimming or riding a bike, to follow the rules of measurement is a piece of *technical know-how*.

Note that the measurement involves two material things – the wall and the ruler (the metre stick, my feet, or anything that can be used). Both are material things that I perceive, but they play different *roles*. For while the wall is the *object*, the ruler is the *means* of judgment. Certainly, I could have measured the ruler, but that was not what I did. By virtue of being the thing I determine the wall has the *status* of object, while the metre stick, by virtue of being *used* as the means, has the *status* of ruler.

According to the example, the Kantian conception of experience should be construed in terms of empirical judgments that result from the (possible) performances of overt actions, through which objects are compared with material standards according to rules. Since experience therefore presupposes the acquisition of behavioural techniques, the model opens for a defence of Kant's idea of the synthetic *a priori*.

IV

As most interpreters know, Kant explicitly denies the existence of implanted, God-created and innate principles (B 167 – 168). All kinds of knowledge, whether *a priori* or *a posteriori*, and all representations, whether concept or intuition, including space, time and the categories, are acquired: "Die Kritik erlaubt schlechterdings

keine anerschaffene oder angeborne *Vorstellungen*; alle insgesamt, sie mögen zur Anschauung oder zu Verstandesbegriffen gehören, nimmt sie als *erworben* an."¹⁵ The passage provides me with a decisive pro-argument, for while most commentators seem to have difficulties reconciling their interpretations of the synthetic *a priori* with Kant's explicit renunciation of innate representations, concepts, and transcendental principles, my interpretation is compatible with this central Kantian claim.

If it is kept firmly in mind that "experience" means *empirical judgment* it should not be too hard to realize that the *a priori* conditions of experience can be a set of acquired behavioural techniques; for, as the above length-example shows, empirical judgments depend upon the capacity to determine the properties of objects through the performance of overt actions according to rules.

The main difficulty is to prove that experience depends upon a *fixed* set of culturally invariant techniques corresponding exactly to Kant's formal conditions

¹⁵ The passage continues: "Es gibt aber auch eine ursprüngliche Erwerbung (wie die Lehrer des Naturrechts sich ausdrücken), folglich auch dessen, was vorher gar noch nicht existiert, mithin keiner Sache vor dieser Handlung angehört hat. Dergleichen ist, wie die Kritik behauptet, *erstlich* die Form der Dinge im Raum und der Zeit, *zweitens* die synthetische Einheit des Mannigfaltigen in Begriffen." Kant, *Über eine Entdeckung*, page (W) BA 68/ (Ak) 221. In what follows, he explicitly says that the transcendental concepts of the understanding are originally acquired. Still, there must be a basis that makes it possible "daß die gedachten Vorstellungen so und nicht anders entstehen und noch dazu auf Objekte, die noch nicht gegeben sein, bezogen werden können, und dieser Grund wenigstens ist angeboren." The innate basis is the "bloße Receptivität" and "die subjektiven Bedingungen der Spontanität des Denkens (Gemäßheit mit der Einheit der Apperzeption)". Kant's point is standardly taken to be that "Zeit, Raum, Kategorien ... sind keine als fertig angeborne Vorstellungen, sondern werden erst 'bei Gelegenheit der Erfahrung entwickelt'", Heinrich Ratke, *Systematisches Handlexikon zur Kritik der reinen Vernunft*, Hamburg 1972, page 11, *Angeboren*. But in that case, they would still be innate, only not *qua* "fertig" developed; their acquisition would merely be the enfolding of what exists virtually in the mind, not "eine ursprüngliche Erwerbung ... dessen, was vorher gar noch nicht existiert". By contrast, the behavioural techniques that make empirical judgments possible do not exist in the agent before they are learned. Hence externalism explains how representations can be both *a priori* and originally acquired: they are neither abstracted from the senses nor developed from intellectual "seeds", but formed with the acquisition of behavioral skills. Before learning, the mind is a true *tabula rasa*; yet, there must also be an innate basis, for without the innate capacity to receive sensations and a predisposition for agency, human beings would not be able to learn to perform the system of techniques that enables us to know the world. This also makes sense of Kant's claim in *Kr. d. r. V.*, that the system of categories is neither of empirical origin (through a sort of *generatio aequivoca*) nor a *preformation-system*, but a system of the *epigenesis* of pure reason (B 167). Internalism, however, seems unable to make sense of Kant's concept of original acquisition. Recently, Guenther Zoeller has criticized the received view for assimilating the Kantian *a priori* to the Cartesian-Leibnizian innate. Here he is right, but on his internalist construal, original acquisition is "an acquisition from within", "through reflective thematization of what goes on in mental activity". Thereby also he projects too much into the innate basis: the "action of the mind itself". Zoeller, *From Innate to A Priori: Kant's Radical Transformation of a Cartesian-Leibnizian Legacy*, *The Monist*, Vol. 72, No. 2, 1989, pages 226–228.

of experience. But a similar problem confronts interpretations in terms of inner acts; and besides, the difficulty is not necessarily insurmountable. I shall not pursue the question here; but what is required, it seems, is an exhibition of the structure of experience showing the validity of Kant's metaphor, that pure reason: "... in Ansehung der Erkenntnisprinzipien eine ganz abgesonderte, für sich bestehende Einheit ist, in welche ein jedes Glied, wie in einem organisierten Körper, um aller anderen und alle um eines willen da sind, ..." (B XXIII).

I believe one cannot deal with this difficulty unless one has a clear idea of the synthetic *a priori*. Kant's arithmetical example from the introduction to *Kr. d. r. V.*, that ' $7 + 5 = 12$ ' is synthetic *a priori*, shows that synthetic *a priori* knowledge is based on acquired behavioural techniques:

Der Begriff von Zwölf ist keineswegs dadurch schon gedacht, daß ich mir bloß jene Vereinigung von Sieben und Fünf denke, und, ich mag meinen Begriff von einer solchen möglichen Summe noch so lange zergliedern, so werde ich doch darin die Zwölf nicht antreffen. Man muß über diese Begriffe hinausgehen, indem man die Anschauung zu Hilfe nimmt, die einem von beiden korrespondiert, etwa seine fünf Finger, oder (wie Segner in seiner Arithmetik) fünf Punkte, und so nach und nach die Einheiten der in der Anschauung gegebenen Fünf zu dem Begriffe der Sieben hinzutut. Denn ich nehme zuerst die Zahl 7, und, indem ich für den Begriff der 5 die Finger meiner Hand als Anschauung zu Hilfe nehme, so tue ich die Einheiten, die ich vorher zusammennahm, um die Zahl 5 auszumachen, nun an jenem meinem Bilde nach und nach zur Zahl 7, und sehe so die Zahl 12 entspringen (B 15–16).

Counting by means of fingers is an overt action, so once again we see that synthesis for Kant is overt. There is no mention of mental acts, underlying inner structures, unconscious processes, or God-given or innate representations. How can interpreters deny that overt actions are basic to Kant when overt counting plays such a prominent role in an example intended to explain what the synthetic *a priori* nature of mathematics consists in?

Like most people, I can of course carry out the above computation mentally. But this fact does not show that overt actions are not fundamental to arithmetic, for mental calculation is just the internal exercise of a technique. Clearly, the external exercise is fundamental, for we cannot attribute an ability to someone who never displays it.

The role of overt action is also concealed by the fact that persons confronted with sets, e. g. 5 apples, commonly are able to know the number of elements just by looking. But such passive knowledge is made possible by the epistemic connection that was created between the perceived picture and the concept through earlier overt actions: we know the number of elements just by looking, because we have counted objects so many times that the resulting pictures have become associated with numerals.

The need for overt action is better seen if we consider larger numbers, e. g. one thousand. For we cannot easily perceive whether a given set, e. g. of coins, contains exactly thousand elements. To judge the correct amount of coins we must count them. If the coins lay orderly we could count them mentally, otherwise we would

have to separate them physically. Since the latter is the most basic skill, natural numbers depend ultimately upon the performance of overt operations (B 179–180).¹⁶

Kant does not say much about the role of language and this has led to the widespread dogma that he believed knowledge to be possible even without language. But the fact is that Kant explicitly says that judgments require the use of words.¹⁷ And the use of words is, in fact, an integral part of the techniques of representing number-concepts.

To possess concepts like '7' and '5' is to master a technique involving both verbal and non-verbal behaviours: (a) for expressing the series of natural numbers in language (learned by heart) and (b) for producing physical representations corresponding to each numeral, e. g. by setting points on a piece of paper, grabbing fingers, or moving beads from one side of the abacus to the other (B 299). But while '7' and '5' may be represented separately, the concept of the sum $7 + 5$ is the technique for representing '7' and '5' together, e. g. as in this picture:

```

1 2 3 4 5 6 7 1 2 3 4 5
. . . . . . . . . . .

```

Kant's claim that the concept '12' is not contained in the concept ' $7 + 5$ ' has of course given rise to much controversy, but it seems to me that this is due to misunderstandings of what he means. All we really need to verify Kant's claim is the simple fact that the number '12' is not represented in the picture since I have not yet expressed the numeral "12". One further step of the operation is required to learn that the answer is 12:

```

1 2 3 4 5 6 7 1 2 3 4 5
. . . . . . . . . . .
1 2 3 4 5 6 7 8 9 10 11 12

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What I do is simply to count the points that were produced as a representation for the concept ' $7 + 5$ '. I mark the first point with the numeral "1" (or I could start at the point after "7") and continue straight through the series of natural

¹⁶ Of course, we do not have to count 1,000 elements unit by unit in order to think thousand. Kant indicates that large numbers can be represented on the basis of higher-order units, e. g. according to the decade-system (B 104). Michael Friedman explains: "In the case of large numbers such as 1,000, we can make this surveyable by means of decimal notation: thus, 1,000 iterations can be conceived as ten iterations of the operation of performing ten iterations of the operation of performing ten iterations." Friedman, *Kant on Concepts and Intuitions in the Mathematical Sciences*, note 49, page 253.

¹⁷ "Die Logiker tun gar nicht recht daran, daß sie einen Satz durch ein mit Worten ausgedrucktes Urteil definieren; denn wir müssen uns auch zu Urteilen, die wir nicht für Sätze ausgeben, in Gedanken der Worte bedienen." *Über eine Entdeckung*, page (W) BA 16 n / (Ak) 193–194 n. He also makes this point in the *Logik*, page (W) A 170 / (Ak) 109. That Kant regards linguistic signs as requisites for concept-possession is evident from his discussions of deaf-mutes in the *Anthropologie*, pages (W) BA 48–49, BA 55–56 / (Ak) 155, 159.

numbers until all the previously represented points are marked. Since I mark the last point with the numeral "12", I have exhibited that 7 and 5 is 12. ' $7 + 5 = 12$ ' is synthetic *a priori*, not because of underlying structures, "Platonic" ideas, mental acts or postulated queer inner acts, but simply because *this is how we carry out the calculation*.¹⁸

Compare with a synthetic *a posteriori* quantity-judgment, e. g. "my hands have 10 fingers". While I could exhibit the *a priori* judgment even if I happened to have fewer than 10, the empirical judgment requires that I do have exactly 10 fingers. Unlike the empirical judgment, the truth of synthetic *a priori* judgments does not depend upon the number of fingers existing prior to and independently of the synthesis, but merely upon the application of the technique for counting to the picture that was produced in the first steps of the action.

The comparison shows that the fingers, points, etc. used in the exhibition of the synthetic *a priori* judgment *do not have the status of objects*. Of course, this is not to deny that they are objects, for certainly we can, and do, determine their properties in empirical judgments. My point concerns their role and status in the exhibition: the synthetic *a priori* judgment is not *about* these self-produced representations, but is exhibited *by means* of them.¹⁹

An *a priori* judgment has objective validity only in so far its concepts can be applied to objects given *a posteriori* (B 147), i. e. in virtue of the behavioural techniques (syntheses) that make experience possible: "Da also Erfahrung, als empirische Synthesis, in ihrer Möglichkeit die einzige Erkenntnisart ist, welche aller anderen Synthesis Realität gibt, so hat diese als Erkenntnis a priori auch nur dadurch Wahrheit (Einstimmung mit dem Objekt), daß sie nichts weiter enthält, als was zur synthetischen Einheit der Erfahrung überhaupt notwendig ist" (B 196 – 197).

' $7 + 5 = 12$ ' has objective validity (*objektive Gültigkeit, Realität*) because it is true by virtue of the technique which is also the condition for the possibility of *a posteriori* quantity-judgments. It is *strictly universal* by virtue of the universal applicability of its concepts to all sorts of objects, and *necessary* since my action would not qualify as following the rules of addition unless I arrive at 12. But this goes for anyone mastering the technique: objectivity implies inter-subjectivity (B 848).²⁰

¹⁸ Wittgenstein holds mathematics to be synthetic *a priori* for similar reasons. Wittgenstein, *Bemerkungen über die Grundlagen der Mathematik*, part III, # 42 (in the 1978 edition: part IV, # 43). Philosophers who claim to be friends of Wittgenstein and foes of Kant, for example Richard Rorty, seem to have missed this point.

¹⁹ The same crucial point is made by Wittgenstein: "Wir beurteilen nicht die Bilder, sondern mittels der Bilder". *Bemerkungen*, part III, # 12 (in the 1978 edition: part IV). See also his distinction between *Sinnbestimmung* and *Sinnverwendung* in part II, # 37 (in the 1978 edition: part III).

²⁰ Jürgen Habermas holds the stronger thesis that inter-subjectivity is the condition for rule-following: "Eine Regel muß intersubjektiv für mindestens zwei Subjekte Geltung haben, wenn ein Subjekt einer, und das heißt, derselben Regel soll folgen können." Habermas, *Theorie des Kommunikativen Handelns*, Frankfurt am Main 1985, Band 2, page 34. I

We have seen that synthetic judgments *a priori* express knowledge of the observable world that we have simply by virtue of mastering the behavioural techniques involved in experience. This explains why Kant's leading question is "Wie sind synthetische Urteile *a priori* möglich?" (B 19): the existence of synthetic *a priori* judgments entails the claim that our knowledge depends on the performance of overt actions according to rules.

V

Kant's phrase "indem ich für den Begriff der 5 die Finger meiner Hand als Anschauung zu Hilfe nehme" (B 15) provides important clues to the meaning of the central term "sinnliche Anschauung": (1) sensible intuitions display concepts, for the fingers were used to display number-concepts and their connection in the synthetic *a priori* judgment. (2) That which is "called in the aid of intuition"²¹ are material things, for the fingers of my hand are material. (3) Our intuitions display concepts in public, for the display by means of material things is open to all. (4) The intuition is not the object of knowledge, but the external representation mediating between knowledge and its object, for the fingers in Kant's example, like the metre stick in mine, play the role of means of representation, not of the object judged.

However, not all sensible intuitions are products of intentional action, but arise as we are affected by material objects. This important point is not expressed in Kant's phrase. But it is not difficult to realize (5) that objects presented to the senses give rise to intuitions in conformity with the intuitions we make *a priori*. By virtue of their isomorphy with the pictures we produce, perceived objects display passively the very meanings that we display ostensively: to persons mastering the elementary techniques of number-concepts, five apples appear (*erscheint*) as five, viz. display the concept 'five' *a posteriori*, because they fit the picture perceived when the concept is constructed *a priori* by means of five material things.

In ordinary language, the German verb "anschauen", like the Latin "intueri", means "to look at", "to inspect", "to gaze at"; the noun "Anschauung" means "view", both in the literal, passive sense and the metaphorical sense of "opinion". But the root is also used in terms with an ostensive meaning, as in the verb "anschaulich machen", i. e. "to demonstrate", "to show", "to illustrate", "to ex-

cannot see what necessity there is in the language-games of theoretical reason that can save Habermas from the charge that his use of the word "muß" is nonsensical. Habermas appeals to Wittgenstein, but it has been argued, for example by Colin McGinn, that Wittgenstein never held the "community-view". See McGinn, *Wittgenstein on Meaning*, Oxford 1984, pages 77–92. McGinn's interpretation is confirmed by Wittgenstein's discussion of the kind of consensus that belongs essentially to calculation. Wittgenstein, *Bemerkungen*, part II, # # 66–67 (in the 1978 edition: part III).

²¹ Paraphrase of Kemp Smith's translation.

emplify", and in the adjective "anschaulich", i. e. "perspicuous", "plain to view". Kant's arithmetical example substantiates that all these meanings, perhaps except "opinion", are relevant to the interpretation of his term.

The tradition, however, has focused one-sidedly upon the passive at the cost of the ostensive meaning; accordingly, the intuition is construed as the looking-at, and – by extension to all five senses – the sensible awareness of, a particular object.²² As a result, the essential point in Kant's fundamental requirement for the theoretical use of reason,²³ that concepts must be exhibited in intuition, is lost. But Kant is explicit about the need for ostensive display:

Verstandesbegriffe müssen, als solche, jederzeit demonstrabel sein (wenn unter Demonstrieren, wie in der Anatomie, bloß das *Darstellen* verstanden wird); d. i. der ihnen korrespondierende Gegenstand muß jederzeit in der Anschauung (reinen oder empirischen) gegeben werden können ... So sagt man von einem Anatomiker: er demonstriert das menschliche Auge, wenn er den Begriff, den er vorher diskursiv vorgetragen hat, vermittelt der Zergliederung dieses Organs anschaulich macht.²⁴

To give a concept of the understanding its corresponding thing (*Gegenstand*) in the intuition, is to demonstrate it. Kant now uses "demonstration" in a different sense than in *Kr. d. r. V.*, where he reserves the term for apodeictic proofs in so far as they are intuitive (B 762). But as he explains, the term should be understood in the broad sense of "Darstellen", as in anatomy. In parts of the passage not cited, he equates "demonstrated" with "shown" ("demonstriert, aufgezeigt"), "demonstrate" with "ostend", "exhibit" ("demonstrieren (ostendere, exhibere)"). My own choice of "display" ought to cover the broad sense adequately.

Kant's meaning-requirement applies to all concepts in theoretical use, not only the categories. Thus, to exhibit any concept in the intuition is to display it ostensively.²⁵ Since ostensive display is a public showing, like the anatomist's demonstration of the human eye, Kant's position cannot be, at least not primarily, that sensible intuitions are private representations of object, but on the contrary, that they are *representations which can be shown to others*. Here we must be careful to distinguish between (a) the performance of a demonstration, and (b) what we perceive *in* the demonstration, the display perceived in bodily motions and/or the manipulation of physical things. Although performances of demonstrations are

²² "In its primary sense intuition is the immediate awareness of particulars; by transference the word becomes applied to the particulars we are immediately aware of." Ralph C. S. Walker, *Kant*, London 1989, page 43. Intuitions are of course no less passive in the sense above on the quasi-mechanical interpretation of perceptual awareness as structured by inner, unconscious activity.

²³ Kant employs "theoretical" in the sense of the Greek "theoria", observation; the theoretical use of reason is the application of concepts to observable objects through sensible intuitions. The meaning-requirement does not apply to the practical use of reason in which the categories "auf die [Bestimmungen] des Subjekts und dessen Wollen gerichtet ist" (B 166 n).

²⁴ *Kritik der Urteilskraft*, pages (W) B 240–241/(Ak) 342–343.

²⁵ Ostensive display should not be confused with ostensive definitions; it is not enough merely to point at samples to provide concepts with meaning.

typically²⁶ syntheses, displays for the senses – that which can be perceived by others – are intuitions.

Kant insists that all human intuitions, including pure intuitions, are sensible (B 146–147). The point is that concepts in theoretical use *must* be displayed for the senses by means of material things in order to have meaning:

Daher erfordert man auch, einen abgesonderten Begriff *sinnlich zu machen*, d. i. das ihm korrespondierende Objekt in der Anschauung darzulegen, weil, ohne dieses, der Begriff (wie man sagt) ohne *Sinn*, d. i. ohne Bedeutung bleiben würde. Die Mathematik erfüllt diese Forderung durch die Konstruktion der Gestalt, welche eine den Sinnen gegenwärtige (obzwar a priori zustande gebrachte) Erscheinung ist. Der Begriff der Größe sucht in eben der Wissenschaft seine Haltung und Sinn in der Zahl, diese aber an den Fingern, den Korallen des Rechenbretts, oder den Strichen und Punkten, die vor Augen gestellt werden (B 299).

For mathematical concepts to have meaning, they must be constructed *in concreto*, i. e. displayed for the senses in self-produced pictures. The concept (category) of quantity depends upon number, which in turn is displayed in pictures made by means of the fingers, the beads of the abacus, strokes or points, that can be placed before the eyes. Both this passage and B 15 make it clear that limbs and/or other material things are required, not just for the application of mathematical concepts to objects, but even for their *a priori* construction in intuition. Since Kant refers to this as a requirement, he cannot be misunderstood: all mathematical concepts must be displayed through the use of material things in order to have meaning. Mathematics serves as an illustration of Kant's general requirement; his position therefore

²⁶ I do not think all ostensive actions, e. g. pointing to the right and left, are syntheses. In this way it can be argued that the pure intuition of space represents it by means of ostensive acts not belonging to the activity of the understanding. There is solid evidence that things' relation to the right and the left hand plays a prominent role in Kant's doctrine of space: "Wir können daher auch den Unterschied ähnlicher und gleicher, aber doch inkongruenter Dinge (z. B. widersinnig gewundener Schnecken) durch keinen einzigen Begriff verständlich machen, sondern nur durch das Verhältnis zur rechten und linken Hand, welches unmittelbar auf Anschauung geht." *Prolegomena zu einer jeden künftigen Metaphysik, die als Wissenschaft wird auftreten können*, page (W) A 59/(Ak) 286. This so-called argument from incongruent counterparts goes back to the precritical work *Von dem Ersten Grunde des Unterschiedes der Gegenden im Raume*, in which Kant claims: "In dem körperlichen Raume lassen sich wegen seiner drei Abmessungen drei Flächen denken, die einander insgesamt rechtwinklicht schneiden. Da wir alles, was außer uns ist, durch die Sinne nur insofern kennen, als es in Beziehung auf uns selbst steht, so ist kein Wunder, daß wir von dem Verhältnis dieser Durchschnittsflächen zu unserem Körper den ersten Grund hernehmen, den Begriff der Gegenden im Raume zu erzeugen" ((Ak) 378–379). The argument reappears in *Von der Form der Sinnen- und Verstandeswelt und ihren Gründen*, § 15, and later in *Metaphysische Anfangsgründe der Naturwissenschaft*, in which Kant claims that incongruent counterparts "einen guten bestätigenden Beweisgrund zu dem Satze abgebe: daß der Raum überhaupt nicht zu den Eigenschaften oder Verhältnissen *der Dinge an sich selbst*, ... sondern bloß zu der subjektiven Form unserer sinnlichen Anschauung von Dingen oder Verhältnissen ... gehöre." *Ibid.*, pages (W) A 8–9/(Ak) 483–484. Kant's continuous emphasis that the human body is fundamental to our representations of space confirms that externalism goes to the heart of transcendental idealism.

is that all concepts in theoretical use must be displayed publicly by means of material things.

Kant is right because theoretical judgments depend upon comparisons in which we determine the properties of objects according to standards, as in measurement. But perceived objects can only be compared with something that affects our senses, i. e. other material things: without public display of concepts by means of material things we would lack criteria for their application to the observable world. Thus the Kantian position is that knowledge depends upon the determination of perceived objects through self-produced sensible intuitions: "Weil ich aber bei diesen Anschauungen, wenn sie Erkenntnisse werden sollen, nicht stehen bleiben kann, sondern sie als Vorstellungen auf irgend etwas als Gegenstand beziehen und diesen durch jene bestimmen muß, ..." (B XVII). Merely to display a concept in the intuition is insufficient for knowledge; the produced representation must be related to something as object and the latter determined through the former.

Three examples serve to explain the point:

(i) The intuition corresponding to the concept 'round' is the display by the circular (or elliptical, etc.) motion of my index-finger or its imprint on a transparent paper. But in order to have knowledge of roundness I must relate the representation to something as an object, and determine the object through it, e. g. by outlining a curve with my index-finger along the circumference of a cup, or by matching the cup against the curve drawn on the transparent paper (cf. B 162).²⁷

(ii) To display the concept 'five' by successively grabbing fingers is merely to exhibit it in intuition; knowledge of quantity requires that such representations are related to objects and their number determined through them, e. g. by counting apples on the table or the fingers on my hands. Even the synthetic *a priori* judgments of pure arithmetics would not yield knowledge were it not for the application of numbers to objects in empirical judgments.

(iii) I can display a length, e. g. 2 metres, in intuition by means of a ruler even without measuring an object. But knowledge of length requires that I relate such representations to an object, e. g. my desk, and determine it through the representation of its length that I mark upon the metre stick.

In these cases properties are predicated of perceived objects through comparisons with the sensible intuitions which display the concepts of these properties. This explains Kant's distinction between intuition and concept: "Jene bezieht sich unmittelbar auf den Gegenstand, und ist einzeln; dieser mittelbar, vermittelt eines Merkmals, was mehreren Dingen gemein sein kann" (B 377). Traditionally, commentators construe the distinction according to the passive meaning of "anschauen",

²⁷ Once familiar with "round" and the perceptual characteristics of roundness there is, of course, no need to carry out the comparison each time, but I must have learnt to do it. Phrases like "in einem Bewußtsein müssen verbunden werden können" (B 136–137) show that Kant did not believe that we have to carry out the synthesis on each and every occasion, but merely that we must have the *ability* to do it. This is important for avoiding the fallacy of reducing syntheses into unconscious processes.

viz., that sensible intuitions are the particular objects to which concepts apply, or rather, the awareness of such particulars.²⁸ But the textual evidence already brought forward shows that Kant cannot be interpreted in line with this traditional idea of subsumption, which is a bipolar model with no place for a mediating representation between the concept and the objects the concept is about.

On the Kantian model of subsumption, the intuition is neither the object, nor the awareness of the object, which is subsumed under the concept, but the external representation through which objects are subsumed under the concept. In the three examples above, the subsumption of a cup under the concept 'round' is mediated by the ostensive representation of a curve outlined in the motion of my index-finger; the subsumption of five apples under the concept 'five' by the representation of fiveness displayed with the help of my fingers; the subsumption of my desk under the concept '2 metres long' by the representation of 2 metres upon the metrestick. Since in each case the material things used as intuition are the means, the intuition relates immediately, but the concept only mediately, to objects of judgment. And while the concept is about a property that can be common to many objects, its corresponding sensible intuition is singular.²⁹

Kant's example on page B 176, the subsumption of plates under the empirical concept 'plate', confirms this interpretation: "So hat der empirische Begriff eines *Tellers* mit dem reinen geometrischen eines *Zirkels* Gleichartigkeit, indem die Rundung, die in dem ersteren gedacht wird, sich im letzteren anschauen läßt." According to the text, the empirical concept of a plate has similarity with the pure geometrical concept of a circle in that the curve which is thought in the concept 'plate' can be intuited in the concept 'circle'. Kant's point is that particular plates are subsumed under the concept 'plate' by means of (i) the thought of roundness, which (at his time, cf. B 756) is contained in the empirical concept 'plate', and (ii) the ostensive construction of the pure geometrical concept of a circle (cf. B 745), since that display can also serve as an intuition of the concept 'round'.³⁰ The tradition, having overlooked the mediating role of sensible intuitions, is quite unable to make sense of Kant's example. On the traditional view, Kant would be expected to have said rather that the curve is thought in the pure geometrical concept of a

²⁸ Peter Strawson is representative: "This is the duality of general concepts, on the one hand, and particular instances of general concepts, encountered in experience, on the other." "His word for awareness in experience of particular instances of general concepts is 'intuition'." Strawson, *The Bounds of Sense*, London 1973, page 20.

²⁹ Thus, Kantian intuitions play pretty much the same role as Wittgensteinian paradigms. Cf. Wittgenstein, *Philosophische Untersuchungen*, # 50 and the use of "Anschauung" in # 53, and *Bemerkungen über die Grundlagen der Mathematik*, part II, # 31 and the claim in # 42: "der Beweis ist der *anschauliche* Vorgang" (in the 1978 edition: part III).

³⁰ Roundness is of course not the *only* characteristic relevant to the subsumption of plates under 'plate'; it is just an example.

circle and intuited in (the perception of) a plate.³¹ I believe this conflict with Kant's text reflects a failure to grasp the essence of his philosophy.

As indicated in sections III and IV, what makes us forget the essential role of behavioural techniques in human knowledge is the fact that we can often pass judgments without exercising those techniques. Just as we can sometimes estimate the length and the number of objects visually, we can determine that a plate is round without comparing it with a self-produced circle. The fact that we can have knowledge of the things we perceive without *exercising* the behavioural techniques prompts us to infer that we could have this knowledge even without *mastering* them.

The circumference of a plate does of course look pretty much the same as the circle outlined in the air or drawn on a piece of paper. Since the circumference has perceptual properties similar to the self-produced circle serving as an *a priori* intuition for the thought of roundness, the thought will as well be represented *a posteriori* by the plate. As such, the plate has the status of *Erscheinung*: it represents roundness even when not determined in judgments (B 34, B 122). This fact makes it appear as if the plate represents roundness *in itself*, i. e. independently of the behavioural techniques for (a) the construction of the concept 'round' in the intuition and (b) the application of the concept to perceived objects by means of the self-produced geometrical figure. But that is illusory, for the plate only represents roundness in virtue of such skills. The illusion is tantamount to mistaking an *Erscheinung* for a *Ding an sich*: without a set of behavioural techniques I could form no representation of a perceived object, "da ihre Eigenschaften nicht in meine Vorstellungskraft hinüber wandern können".³²

The tradition seems to have taken as an unquestioned premise the commonsense belief that we can know the world independently of a set of behavioural techniques for (a) the representation and (b) the application of concepts. But if the externalist interpretation is right, that is the very mistake *Kritik der reinen Vernunft* is designed to expose: transcendental realism.

³¹ Hans Vaihinger proposed to adjust Kant's text to read: "indem die Rundung, die in dem letzteren gedacht wird, sich im ersteren anschauen läßt". See the Felix Meiner edition of *Kritik der reinen Vernunft*, page 197. Kemp Smith has unfortunately based his translation upon Vaihinger's proposal. See also Frank Obergfell, *Begriff und Gegenstand bei Kant*, Würzburg 1985, pages 43–44.

³² *Prolegomena*, page (A) A 52/(Ak) 282.