

Instinct as a Foundational Concept in Adam Smith's Social Theory*

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Abstract:

Adam Smith's social theory analyzes and interprets both the unfolding and accumulative structures of human nature and society, while considering the foundation of human instinct. My reinterpretation makes it possible to achieve a coherent understanding of *The Theory of Moral Sentiments* and *The Wealth of Nations*, and to recognize the commonalities among Smith, Hume, and Darwin with respect to the viewpoint of evolutionary point of view.

Smith's concept of "instinct" is distinctly biological; it differs obviously from Locke's philosophical concept and Hume's psychological one. There is no doubt that Smith followed Locke and Hume in terms of his empirical understanding of human knowledge and ways of thinking; nonetheless, Smith remained convinced that animals had instincts—that is, they are born with innate programs. As shown in his detailed descriptions in "Of the External Senses"—including those of instinctual perception among the young of the partridge, the goose, and suckling animals, as well as worms that have no head but yet search for food—Smith came to this idea through elaborate direct observations and indirect observations via the work of Linnaeus. For Smith, the human species incorporates the instincts of self-interest (self-preservation) and mutual altruism (sociability, the propensity to exchange). This understanding is maintained without any change from that outlined in the "Letter to Authors of the *Edinburgh Review*" to that in the sixth edition of *The Theory of Moral Sentiments*.

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The purpose of this essay is to suggest, on the basis of a precise examination of Adam Smith's conception of "instinct"—mainly scrutinized in his posthumous article "Of the External Senses" (ES hereafter)—that his social theory analyzes and inter-

prets both the unfolding and accumulative structures of human nature and society, while considering the foundation of human instinct in a biological sense. This approach has, therefore, some bearing on recent works that focus on the importance of a biological ap-

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proach to Smith (Schabas 2003; 2005) as well as the methodological similarities between Smith's theory of sympathy and Darwin's evolutionary understanding of the human species (Evensky 2005; Laurent and Cockfield 2007).

As to biology, two facts seem to be immediately noteworthy. First, Smith's letter to Andreas Holt (October 1789) says that he studied botany with "no great progress" while writing *Wealth of Nations* (1776; WN hereafter) at Kirkcaldy (COR, 252); "botany" was the name given at that time to the discipline now known as "biology," with the latter being "a term used since the beginning of the 1800s" (Farber 2000, 77). Second, Adam Smith's library included not a few biology (botany) books, such as Buffon's *Histoire Naturelle* (1749–67), Fontenelle's *Oeuvres* (1752), Linnaeus's *Systema Naturae* (1766–1768), Miller's *Gardener's Dictionary* (1769), and Ray's *Synopsis Methodica* (1696/1724). Smith mentions Buffon's work in "A Letter to the Authors of the *Edinburgh Review*" (1755–56; LER hereafter) and WN, and Linnaeus's in ES.

The posthumous article ES is usually "looked at from the point of view of philosophical psychology rather than that of natural philosophy"; it is guessed that it was written "before [Smith became] closely acquainted with Hume"—that is, before 1752. Wightman (1980) speculates that ES was written prior to 1752, before Smith was closely acquainted with Hume (133–34). This interpretation seems perfectly sound and persuasive for the first half of the essay; however, Wightman's appreciation of the latter half of the essay and the fact that Smith's "careful 'field' observations on animals" re-

veals his genius seems to be inadequate and superficial: no explanation is provided as to why Smith had to extend his observations of animals there.

It might well be that the latter half of ES, including the greater part of the section "Of the Sense of Seeing," was written after 1766–68, when the 12th edition of Linnaeus's *Systema Naturae* was published and stocked in Adam Smith's library. Unlike earlier editions that show "his arrangements and nomenclature to the learned," the 10th edition adopted definitions of Classes and Orders of animals that were suitable for use even by amateurs (Cain 1992, 245–46); it was also expanded to 1,384 pages from the previous edition's 227, eventually reaching 2,299 pages in the 12th edition. That both the new Order *Gralae* and the Class *Mammalia* coined by Linnaeus in the 10th edition of *Systema Naturae* in 1758 are used by Smith in the latter part of the article has been pointed out by Brown (1992, 334). Rather than be considered a meritorious finding, Brown's estimation of the dating of ES between 1758 and October 1759 has been challenged by Smith scholars, since these facts are incidental rather than essential to Smith's argument (Ross 1995, 104; Schabas 2003, 266–67 fn.). However, it cannot be overlooked that "the animal kingdom Linnaeus divides into six classes, [and] to each he adds their generic and specific characters; before him nobody had clearly distinguished the Vermes from the Insects" (Engel-Ledeboer and Engel 1964, 9). Smith mentions Linnaeus toward the end of his article: "That numerous division of animals which Linnaeus ranks under the class of worms, have, scarcely any of them, any head. They neither see nor hear,

have neither eyes nor ears: but many of them have the power of self-motion, and appear to move about in search of their food" (ES, 83). We recognize that Smith's understanding of biology, as witnessed in ES, had greatly surpassed that seen in "The History of Astronomy" (probably written before 1758; HA hereafter), in which he says that "all things endowed with a power of self-motion, beasts, birds, fishes, insects, are classed under the general name of Animal" (HA, II.1). This shows clearly that Smith had no knowledge of *Wermes* (worms) when writing HA.

It seems appropriate, therefore, to seek evidence in dating ES—first, to carry out a reinterpretation of ES; second, to compare Smith's biological conception of "instinct" with Locke's philosophical and Hume's psychological and physiological conceptions; and third, to survey Smith's references to instinct from his "A Letter to the Authors of the *Edinburgh Review*" to the sixth edition of *The Theory of Moral Sentiments*.

I The Dating of ES: Smith's Interest in the Instinctive Power of Perception

In the latter part of ES, Smith tries to establish three propositions. First, four classes of sensations—namely, heat and cold, taste, smell, and sound—are not naturally perceived as external and independent substances, or even as qualities of such substances, but as mere affections of the organs; they can exist nowhere but in the organs (ES, 25), says Smith, and the different degrees of these sensations altogether result from experiences. Second, the genuine possibility that neither man nor animal "was ever born without the sense of touch, which seems essential

to, and inseparable from, the nature of animal life and existence" (ES, 49) must be shown in relation and comparison to the other four senses. Third, the existence of instinct in man and animal in the sense of innate, programmed behavior suggests the possibility of complementing the inadequacies inherent in Hume's empiricism.

Like many other enlightenment philosophers, Smith also pays attention to Cheselden's report¹⁾ on a young gentleman who was born with a cataract and whose sight was restored through an operation. Following recovery, however, it was found that his prior touch-acquired knowledge of particular objects did not accord with his new sight-acquired knowledge, and so he "at first learned to know, and again forgot a thousand things in a day." When the young gentleman saw a painting with perspective and a variety of paints, its plain surface led him to ask "which was the lying sense, feeling or seeing?" After observing a superb landscape at Epsom-downs one year later, he called it "a new kind of seeing." Smith interprets the case thus:

Though it may have been altogether by the slow paces of observation and experience that this young gentleman acquired the knowledge of the connection between visible and tangible objects; we cannot from thence with certainty infer, that young children have not some instinctive perception of the same kind. In him this instinctive power, not having been exerted at the proper season, may, from disuse, have gone gradually to decay, and at last have been completely obliterated. Or, perhaps, (what seems likewise very possible,) some feeble and unobserved remains of it

may have somewhat facilitated his acquisition of what he might otherwise have found it much more difficult to acquire. (ES, 69)

What Smith wants to insist here is this: whilst long and harsh experiences of training are indispensable in making use of the faculty of sight, human beings must have some innate “instinctive perception” that is free from any experiences, if they are to connect visual and tactile knowledge consistently.²⁾ This is nothing but a distinct critique of pure and simple empiricist epistemology, since Smith said “that, antecedent to all experience, the young of at least the greater part of animals possess some instinctive perception of this kind, seems abundantly evident” (ES, 70). While the linnet and the thrush feed their young by dropping food into their bills, the hen does not. Since the young partridge and goose also seem to feed themselves immediately upon hatching, “they seem to understand the language of Vision as well as they ever do afterwards.” Smith says, therefore, this is the case, so far as

I have been able to observe, with those of at least the greater part of the birds which make their nests upon the ground, with the greater part of those which are ranked by Linnaeus in the orders of the hen and the goose, and of many of those long-shanked and wading birds which he places in the order that he distinguishes by the name of Grallae. (ES, 70)

On the other hand, the greater proportion of those organisms ranked by Linnaeus in the orders of the hawk, the magpie, and the spar-

row seem to emerge from the shell blind, continue to be so for at least some days thereafter, and are fed through the joint labor of both parents. However, before leaving the nest, they evidently enjoy all the powers of vision in the most complete perfection. Smith therefore concludes that “in so short a period they cannot be supposed to have acquired those powers from experience, and must therefore derive them from some instinctive suggestion” (ES, 71).

This kind of instinct is not confined to the bird. The young of quadrupeds such as the cow and the horse, like those of the greater proportion of birds that make nests upon the ground, seem to enjoy the faculty of sight just after birth. Even the young of the human species who spend enough time in the arms of their mothers for learning the principle of “association of ideas” by observation and experience must have the same instinct, since “Nature, it may be said, never bestows upon any animal any faculty which is not either necessary or useful, and an instinct of this kind would be altogether useless to an animal which must necessarily acquire the knowledge which the instinct is given to supply, long before that instinct could be of any use to it” (ES, 74). Smith, therefore, says thus:

Children, however, appear at so very early a period to know the distance, the shape, and magnitude of the different tangible objects which are presented to them, that I am disposed to believe that even they may have some instinctive perception of this kind; though possibly in a much weaker degree than the greater part of other animals. A child that is scarcely a month old,

stretches out its hands to feel any little play-thing that is presented to it. It distinguishes its nurse, and the other people who are much about it, from strangers. It clings to the former, and turns away from the latter. Hold a small looking-glass before a child of not more than two or three months old, and it will stretch out its little arms behind the glass, in order to feel the child which it sees, and which it imagines is at the back of the glass. It is deceived, no doubt; but even this sort of deception sufficiently demonstrates that it has a tolerably distinct apprehension of the ordinary perspective of Vision, which it cannot well have learnt from observation and experience. (ES, 74)

Smith's examination of the sense of sight is notably different from Berkeley's, in the sense that Smith elucidates the perspective vision of infants as an innate instinct that is distinct from the associationist principle of empiricism; Berkeley's treatment of it, on the other hand, is limited mostly to a mechanical inquiry of sight as the outcome of an optical device or machine. Smith's argument is much strengthened by the fact that, in the case of the newborns of all suckling animals of Mammalia, they begin immediately sucking through the use of the sense of smelling, regardless of sight capabilities. Although they seem to draw their nourishment through tubes and canals like a vegetable in the womb, as soon as they come into the world, "this new set of tubes and canals, which the providential care of Nature had for a long time before been gradually preparing, is all at once and instantaneously opened," and they require filling. "The smell of the sub-

stance which is fitted for filling them, increases and irritates that uneasy sensation, and produces hunger, or the appetite for food" (ES, 77–78).

It is worth noting here that Smith's observations, probably assisted by Linnaeus's thoroughgoing descriptions of animals' "generic and specific characters," are tolerably accurate and appropriate, and his understanding that "an uneasy sensation of being unfilled" or "the appetite for food" has its origins in the function of each bodily organ. While the human species consists of an organic unity of different organs, the mind, Smith seems to explain, is activated not only by the different sensations of the organs but also by the formation of new connections among them, in the absence of experience. This is not a mechanical or machine view of an animal of self-motion, but rather a biological or evolutionary view of them, for he sought to combine instinct with experiences in growth. Besides this, the following statement shows clearly that Smith's approach was also a psychological one:

All the appetites which take their origin from a certain state of the body, seem to suggest the means of their own gratification; and, even long before experience, some anticipation or preconception of the pleasure which attends that gratification. In the appetite for sex, which frequently, I am disposed to believe almost always, comes a long time before the age of puberty, this is perfectly and distinctly evident. The appetite for food suggests to the newborn infant the operation of sucking, the only means by which it can possibly gratify that appetite. It is continually sucking. It

sucks whatever is presented to its mouth. It sucks even when there is nothing presented to its mouth, and some anticipation or preconception of the pleasure which it is to enjoy in sucking, seems to make it delight in putting its mouth in the shape and configuration by which it alone can enjoy that pleasure. There are other appetites in which the most unexperienced imagination produces a similar effect upon the organs which Nature has provided for their gratification. (ES, 79)

It is abundantly evident that what Smith here calls “the appetite” or “anticipation or preconception of the pleasure” is, in short, the instinctive or innate faculty of cognition. While “some anticipation of the pleasure” is premised, it exists as the cause for *continuing* to suck, rather than *starting* to suck. Instinct is, therefore, “the principle which teaches the child to mould its mouth into the conformation and action of sucking, even before it reaches the object to which alone that conformation and action can be usefully applied” (ES, 80). Citing the fact that there are, among the Worms in Linnaeus’s classification, some animals that have scarcely a head and neither eyes nor ears, but nonetheless have the power of self-motion and move about in search of food, Smith summarizes the concept of “instinct” thus:

A new-born animal, which had the power of self-motion, and which felt its body, either agreeably or disagreeably, more heated or more cooled on the one side than on the other, would, I imagine, instinctively, and antecedently to all observation and experience, endeavour to move towards the

side in which it felt the agreeable, and to withdraw from that in which it felt the disagreeable sensation. But the very desire of motion supposes some notion or preconception of externality; and the desire to move towards the side of the agreeable, or from that of the disagreeable sensation, supposes at least some vague notion of some external thing or place which is the cause of those respective sensations. (ES, 85)

The above citation gives evidence of why Smith insisted neither man nor animal “was ever born without the Sense of Touching, which seems essential to, and inseparable from, the nature of animal life and existence” (ES, 49). Smith here reconfirms that the consciousness of the positional distinction between the internality and externality of a substance is an indispensable sense for all animals, including Worms. The distinctive ability to distinguish “between the internality and the externality of a substance” is definitely vital for individual animals. The senses that find externality agreeable or not, therefore, are different from anything else in a utilitarian sense, since “those sensations appear to have been given us for the preservation of our own bodies,” even though “the agreeableness of Heat and Cold has been found from experience” (ES, 86):

The desire of changing our situation necessarily supposes some idea of externality; or of motion into a place different from that in which we actually are; and even the desire of remaining in the same place supposes some idea of at least the possibility of changing. Those sensations could not

well have answered the intention of Nature, had they not thus instinctively suggested some vague notion of external existence. (ES, 86)

Smith applies the same biological understanding to the sense of Hearing. He is much disposed to the belief that Sound may “instinctively, and antecedently to all observation and experience, obscurely suggest some vague notion of some external substance or thing which excites it.” Although Sound is merely perceived in the ear by a sense receptor, all animals, and especially men, are too careful and cautious about unusual and unexpected sounds. Smith interprets this response to unusual sounds thus: “This effect, too, is produced so readily and so instantaneously that it bears every mark of an instinctive suggestion of an impression immediately struck by the hand of nature, which does not wait for any recollection of past observation and experience” (ES, 87).

This reasoning explains Smith's conclusions in ES: the three senses of Seeing, Hearing, and Smelling seem to be given to us by Nature, not so much in order to inform us concerning the actual situation of our bodies, but as concerning that of other external bodies—which, though at some distance from us, may sooner or later affect that actual situation and eventually either benefit or hurt us (ES, 88). Smith's conclusions might be, in short, summarized as follows: all the sensations of animals, whether independent or composite sensations, must not be understood as the effects of experience and observation alone: some kind of instinct includes not only real information of one's standing, but also futurity concerning self-preserva-

tion.

This conception of “instinct” seems completely consistent with the current biological understanding of it. Ethologist Konrad Lorenz says that the recognition of an enemy—which in mallards and many other birds is an inborn instinct—must be learned personally: “An animal which does not know its enemy by instinct, is informed by older and more experienced fellow-members of its species who or what is to be feared as hostile” (Lorenz [1952] 2002, 133, 137). While Mayr distinguishes Lorenz's theory as “evolutionary epistemology,” we must not overlook Mayr's comment on what is “a great mystery for the philosophers”:

Even the most primitive protists have an apparatus for sensing and responding to the dangers and opportunities they encounter in their habitat. More than a billion years of natural selection have elaborated the genetic program of the human species from that of a simple protozoan into that of mankind. Thus the new biological understanding of the nature of genetic programs has finally explained what for such a long time had been a great mystery for the philosophers. (Mayr 1997, 74)

Although Smith naturally had no knowledge of the nature of genetic programs in modern biology, that was still the issue for him. Smith's original concern in ES was epistemology—that is, the reason why sensory organs generated completely different sensations from the material characters of the object of cognition—and so he made inquiries into their part in the whole intermediate causes of external sensations, “none of which

bear the smallest resemblance to vibration or motion of any kind, [and which] no philosopher has yet attempted to explain to us" (ES, 42). In other words, Smith was thinking about the relationship between instinct and experience—that is, “simple and compound sensations”—in animal development.

Two points, therefore, should be cited here. First, Smith's conception of “instinct” does not indicate that he decisively criticized and rejected the empiricist epistemology of Locke and Hume, since Smith believed that humans learn to distinguish between simple and compound Sensations “altogether by Experience” (SE, 32). Therefore, Lindgren's (1969) comment that Smith has kept the “predominantly conventionalist epistemological position” is quite correct (Ibid., 901).

Second, one should not overestimate Smith's comment vis-à-vis Berkeley's philosophical analysis, as argued in *New Theory of Vision* (Berkeley 1709), in which he says that he has “scarcely any thing to add to what [Berkeley] has already done” (ES, 43). While Smith mentions Berkeley's discourse on Sight and its connection to Touch, Smith's agreement with Berkeley is limited to the analysis of the physical “intermediate causes” of sight—that is, the mechanism of an optical device of Sight. Unlike Berkeley, Smith confronts the biological matters of instinct in animals, according to many elaborate observations of the sensational and cognitive development process of young animal and human species, and he raises serious doubts about rigorous empiricist interpretations of external senses. The novel, original, but faint idea that all animals must be born with an innate instinct to receive and process various sensations—something like a heredi-

tary program in the brain—must result from an inquiry into the unknown principles and intermediate causes of external senses, not from the viewpoint of a transcendentalist but from a rigorous empiricist.

II Instinct and Experience in Perception: The Early Psychological Approach

Smith's conception of “instinct” somewhat resembles the ideas of contemporary leaders of biological science like Linnaeus and Buffon, although they refer not to instinct but internal sense, in cases where external sense is the topic. While Linnaeus refers to “the external and internal senses” (Engel-Ledeboer and Engel 1964, 26), no explicit or concise explanation is provided. It can safely be said that the “internal senses” had previously indicated the neural system and brain, and the “external senses” the bodily organs, but “external and internal senses” was replaced by “sensory organs” after the 10th edition of *Systema Naturae* in 1758. Judging from the argument that “individuals lack in their prime and tender age absolutely all knowledge, and are forced to learn everything by means of their external senses” (Engel-Ledeboer and Engel, 1964, 18), Linnaeus seems not to have any exact notion of “instinct.”

In *Histoire Naturelle*, Buffon discusses internal senses at large in “The Natural History of Man” and external senses mainly in “A Dissertation on The Nature of Animals.” While Buffon indicates that the internal sense is equal to the mind (vol. 3, 98) and that “the nerves are the immediate instruments of feeling” (vol. 3, 286), his fundamentally physiological and complicated ex-

planation of the internal and external senses appears explicitly in the following quotation:

The internal sense differs, in the first place, from the external senses, by the faculty which it possesses of receiving every species of impression; while the external senses are only affected in one mode, corresponding to their conformation: the eye, for instance, is not more affected with sound than the ear with light. Secondly, the internal sense differs from the external senses, by the duration of the vibrations excited by external causes. In every other article, both these species of senses are of the same nature. The internal sense of a brute, as well as its external senses, is pure results of matter and mechanical organization. Like the animal, man possesses this internal material sense; but he is likewise endowed with a sense of a very different and superior nature, residing in that spiritual substance which animates us, and superintends our determinations. (vol. 3, 496–97)

There is no indication that Smith accepted Buffon's explanation of internal and external senses. Moreover, it is clear that Smith was critical of this kind of philosophical and pseudo-physiological interpretation of the internal sense, given his criticism of such an explanation of the Sensation of Taste in ES: "Certain juices of the exciting body are supposed to enter the pores of the palate, and to excite, in the irritable and sensible fibers of that organ, certain motions or vibrations, which produce there the Sensation of Taste. But how those juices should excite such motions, or how such motions should produce,

. . . no philosopher has yet attempted, nor probably ever will attempt to explain to us" (37).

Then, it can therefore be safely said that Smith embraced little of the interpretation of the internal and external senses that had been made by preceding natural philosophers,³⁾ instead establishing a modern concept of "instinct" independently, according to his various observations. Besides, neither Linnaeus nor Buffon adopts instinct as a key concept in their theories. They seem, therefore, to take at best a midwife role for Smith's advancement of biological thinking.

The concept of "instinct," however, cannot be limited to biology. Since sense itself is the main subject of psychology and the critical subject touching the core of philosophy, Locke and Hume each naturally take the term "instinct" into consideration.

While Locke uses the term "instinct" (*instinctu*) in the sense of "impulse" or "drive" in his *Essays on the Law of Nature*, he explicitly denies such notions in the *Human Understanding* as "innate laws of nature" and "innate practical principles" (Locke [1693] 1995, I.iii.2–3); he declares that the word "instinct" has no significance, nor do the words "sympathy" or "antipathy" (Ibid., III. xi.8). Locke's argument—that God spoke to man, "[that is] directed him by his Senses and Reason, as he did the inferior Animals by their Sense, and Instinct, which he had placed in them to that purpose, to the use of those things, which were serviceable for his Subsistence, and given him as means of his Preservation" (Locke [1698] 2002, 205)—shows obviously that instinct is a distinguishing mark of animals that lack reason. Having much knowledge of the classification

of plants studied during his formative years (Sloan 1972, 21), Locke uses not a few biological metaphors in *An Essay Concerning Human Understanding*. Unlike Smith, however, Locke's observation of the development of a newborn child simply leads him to the ultimate empiricist interpretation of perception: the assumption of a "blank paper (*tabula rasa*)" brain (Locke [1693] 1995, II. i.2:20–22). Locke intends to explain how the mind works and how the human species comes to know truth (Pinker 2002, 5), but he has no intention of explaining how the mind emerges.

Hume, on the other hand, repeatedly insists that animals and humans alike learn from experiences and have some form of instinct. Besides, his concept of "instinct" seems to be closer to an innate faculty than Locke's, since he says that "as justice evidently tends to promote public utility and to support civil society, the sentiment of justice is either derived from our reflecting on that tendency, or like hunger, thirst, and other appetites, resentment, love of life, attachment to offspring, and other passions, arises from a simple original instinct in the human breast, which nature has implanted for like salutary purposes" (Hume [1751] 2004, III. 40). So long as Hume argues that "though the instinct be different, yet still it is an instinct, which teaches a man to avoid the fire; as much as that, which teaches a bird, with such exactness, the art of incubation, and the whole economy and order of its nursery" (Hume [1748] 1999, IX. 6), his views of instinct and of the continuity between animals and the human species seem to be perfectly consistent with modern biology-based understandings. Hume's conception of "instinct,"

however, is not liberated from the confusion of reason with instinct, since he insists that "reason is nothing but a wonderful and unintelligible instinct in our souls, which carries us along a certain train of ideas, and endows them with particular qualities, according to their particular situations and relations. This instinct, 'tis true, arises from past observation and experience" (Hume [1739–40] 2001, 1.3.16.9). Here, one can see that the distinction between the innate faculty (program) and the learned faculty fades into ambiguity.

Nevertheless, it may be worthwhile to note that Hume's observations of animal behavior are on rare occasions no less accurate and keen than those of Smith. After enumerating a number of specific animal behaviors to show their particular excellence, Hume concludes that "pride and humility are not merely human passions, but extend themselves over the whole animal creation," and says thus:

The causes of these passions are likewise much the same in beasts as in us, making a just allowance for our superior knowledge and understanding. Thus animals have little or no sense of virtue or vice; they quickly lose sight of the relations of blood; and are incapable of that of right and property: For which reason the causes of their pride and humility must lie solely in the body, and can never be placed either in the mind or external objects. But so far as regards the body, the same qualities cause pride in the animal as in the human kind; and 'tis on beauty, strength, swiftness or some other useful or agreeable quality that his passion is always founded. (Hume [1739–40] 2001, 2.1.12.5)

In short, Hume's conclusion that "all the internal principles, that are necessary in us to produce either pride or humility, are common to all creatures" (Ibid., 2.1.12.9) are nothing but results of "the method of enquiry, which is found so just and useful in reasoning concerning the body, to our present anatomy of the mind" (Ibid., 2.1.12.2).

Then, what is confirmed sufficiently is the fact that Smith's view of instinct, with all his premature thinking, is far more consistent with modern biological insights than Locke's or Hume's, whose empirical analyses were performed mainly from psychology and philosophy-based aspects and with fewer biological insights and observations. It is, however, a matter of course that the term "biology" here refers to understanding behavior according to the genetic program, while the term "psychology" refers to understanding behavior according to the work of the mind or physiological cause-and-effect.

III Conceptual Elaboration of In-instinct, and the Propensity to Exchange

Even if the above remarks are supportable and persuasive, it must nonetheless be admitted that no definite conclusion can be drawn from them, before verifying that Smith used them consistently in his early and late writings. This procedure seems indispensable in providing clues to the dating of "Of External Senses." Smith's first use of that term appears in LER:

Both of them [Mandeville and Rousseau] however suppose, that there is in man no powerful instinct which necessarily deter-

mines him to seek society for its own sake: but according to the one, the misery of his original state compelled him to have recourse to this otherwise disagreeable remedy; according to the other, some unfortunate accidents having given birth to the unnatural passions of ambition and the vain desire of superiority, to which he had before been a stranger, produced the same fatal effect. . . . According to both, those laws of justice, which maintain the present inequality amongst mankind, were originally the inventions of the cunning and the powerful, in order to maintain or to acquire an unnatural and unjust superiority over the rest of their fellow creatures. (LER, 11)

While Smith does not here define the term "instinct" positively, he seems to believe firmly that "there is in man a powerful instinct which necessarily determines him to seek society for its own sake." Although most contemporary Scottish thinkers asserted that human sociality was "instinctive or appetitive" (Berry 1997, 25), Smith's understanding of instinct seems to go beyond Hume's view of it, in the sense that even Hume had become enmeshed in the conventional meaning of "instinct" as a wild "animal passion or emotion." We find the same usage in *The Theory of Moral Sentiments* (1759; TMS hereafter), although there the expression is slightly different from that used in LER:

Though man be naturally endowed with a desire of the welfare and preservation of society, yet the Author of nature has not entrusted it to his reason to find out that a

certain application of punishment is the proper means of attaining this end; but has endowed him with an immediate and instinctive approbation of that very application which is most proper to attain it. The oeconomy of nature is in this respect exactly of a piece with what it is upon many other occasions. . . . [Nature] has constantly in this manner not only endowed mankind with an appetite for the end which she proposes, but likewise with an appetite for the means by which alone this end can be brought about, for their own sakes, and independent of their tendency to produce it. Thus self-preservation, and the propagation of the species, are the great ends which Nature seems to have proposed in the formation of all animals. (TMS, II. i.5.10)

Two points are worthy of special attention here. First, Smith's arguments that the endowment of the Author of nature is nothing but an instinctive approbation of the welfare and preservation of society constitute, indeed, a radical critique of both Mandeville and Rousseau, since both of them conclude that laws of justice are nothing but devices for maintaining an unnatural and unjust superiority, despite their opposing preconception of the natural state. Notwithstanding his theological style of description, Smith's formula of "instinct-pleasure/reason-punishment" is biological, since it does not contradict Darwin's theory of evolution. Smith believes that all animals, including humans, have an implanted end of self-preservation and propagation of the species universally. Who implanted it—be it the Author of nature or nature itself—matters not to him.

Second, the concept of "instinct" as an innate trait in the first edition of TMS continued to be maintained, even in 1790. Below are three passages from the supplemented portion of the sixth edition.

There seems to be in young children an instinctive disposition to believe whatever they are told. Nature seems to have judged it necessary for their preservation that they should, for some time at least, put implicit confidence in those to whom the care of their childhood, and of the earliest and most necessary parts of their education, is intrusted. Their credulity, accordingly is excessive, and it requires long and much experience of the falsehood of mankind to reduce them to a reasonable degree of diffidence and distrust. (TMS, VII.iv.23)

Here, the meaning of "implanted program of instinct" is expressed clearly, recalling a similar argument on children's instinctive "apprehension of the ordinary perspective of Vision," as developed in ES.⁴⁾ The concept of "instinct" is more thoroughly elaborated upon, to suggest the innate or implanted features of the child without using the term "inherited." A similar recognition reveals itself in the second quotation, below.

Those unfortunate persons whom nature has formed a good deal below the common level, seem sometimes to rate themselves still more below it than they really are. . . . By an instinct of pride, however, they set themselves upon a level with their equals in age and situation; and, with courage and firmness, maintain their proper station among their companions. By an opposite

instinct, the idiot feels himself below every company into which you can introduce him. . . . Some idiots, perhaps the greater part, seem to be so, chiefly or altogether, from a certain numbness or torpidity in the faculties of the understanding. But there are others, in whom those faculties do not appear more torpid or benumbed than in many other people who are not accounted idiots. But that instinct of pride, necessary to support them upon an equality with their brethren, seems totally wanting in the former and not in the latter. (TMS, VI. iii.49)

Considering the continuity and increase of conceptual maturity of “instinct” between the first edition (1759) and the sixth (1790), it must be natural for us to estimate that the dating of ES, especially the latter part of it, is later than 1759 and much earlier than 1790—probably after 1768, when the 12th edition of Linnaeus’s *Systema Naturae* was completed. However, the exact date of writing ES would be provably later than 1768, if we were to compare Smith’s interpretation of “propensity to exchange” in WN with “instinct” in TMS. In the third quotation, Smith says thus:

The desire of being believed, the desire of persuading, of leading and directing other people, seems to be one of the strongest of all our natural desires. It is, perhaps, the instinct upon which is founded the faculty of speech, the characteristical faculty of human nature. No other animal possesses this faculty, and we cannot discover in any other animal any desire to lead and direct the judgment and conduct of its fellows.

(TMS, VII.iv.25)

There are two decisive points of interest here. First, the desire of being believed, persuading, leading and directing other people is treated as an instinct. Second, the faculty of speech that distinguishes the human species is founded upon the social instinct of humans. This new insistence on instinct “upon which is founded the faculty of speech” appears first in the 1790 edition of TMS and affords us an important clue not only for achieving a more accurate dating of ES, but also for understanding the true and ethological meaning of “the propensity to truck, barter, and exchange” in WN.

The term “instinct” never appears in WN. In the opening paragraph of Chapter 2 of its Book 1, Smith refers not to “the instinct to truck, barter and exchange” but to “the propensity to truck, barter, and exchange”:⁵⁾

This division of labour, from which so many advantages are derived, is not originally the effect of any human wisdom, which foresees and intends that general opulence to which it gives occasion. It is the necessary, though very slow and gradual consequence of a certain propensity in human nature which has in view no such extensive utility; the propensity to truck, barter, and exchange one thing for another. (WN, I.ii.1)

Then, it will be necessary to establish whether “instinct” and “propensity” are the same so as to be interchangeable or not. A clue to a possible answer to this question is found in the very next sentence:

Whether this propensity be one of those original principles in human nature, of which no further account can be given; or whether, as seems more probable, it be the necessary consequence of the faculties of reason and speech, it belongs not to our present subject to enquire. It is common to all men, and to be found in no other race of animals, which seem to know neither this nor any other species of contracts.” (WN, Lii.2)

Considering that the italics in this passage were not included in “Early Draft of part of The Wealth of Nations”⁶⁾ (ED hereafter) and appear first in WN, it seems appropriate to suppose that Smith probably tried to decide whether this propensity was a matter of instinct or a necessary consequence of the faculties of reason and speech, without realizing the anticipated result, but failed to do so. However, as pointed out in the discussion of the third quotation, Smith distinctly expresses, in the sixth edition of TMS, his new belief that the faculty of speech is founded on the social instinct of humans—that is, on “the desire of being believed, the desire of persuading, of leading and directing other people.” Then, it can be safely said that Smith’s conception of “instinct” at the time of writing WN had not yet matured to the level of “evolutionary epistemology,” or had been still in bewilderment; therefore, he was forced to be satisfied with some vague conception of “propensity to exchange” at that time. This appears to be positive evidence that the latter and more substantial part of ES was written before 1776, while writing WN, since the treatment of “instinct” in the latter part of ES continues to be premature level,

rather than the very clear conception laid out in 1790—the latter of which showed the most advanced and mature conception of “instinct” in line with that of modern biology. In other words, Smith’s confidence in the terminology was not entirely strong, prompting him to deliberately choose not to decide whether the propensity to exchange was the “original principles in human nature” in WN. It therefore seems appropriate that the dating of ES is 1768–1775.

IV Concluding Remarks

The connection between instinct and “the propensity to exchange,” then, is summarized as follows. While the propensity to exchange is founded on the instinct of the social animal to seek out and enjoy the company of other group members—and thus demands the mental capacity to keep track of given and received favors—humans exchange more things than mere favors. The propensity to exchange is, therefore, a special trait of the human species, which has the faculty to distinguish slight differences among things, in addition to faculties relating to the making of contracts (languages are indispensable here), record-keeping, and accounting.

Smith’s concept of “instinct” in ES, as examined above, demands some more or less intrinsic programs of all animals—programs that are indispensable for the “self-preservation and the propagation of the species.”⁷⁾ In contrast, “the propensity to truck, barter, and exchange” might properly be “the necessary consequence of the faculties of reason and speech.” That is to say, this propensity is not instinct but the product of very long experiences, so that it may supposedly be called “ethnological instinct” of humans. In relation

to this, due attention should be paid again to Smith's assertion in 1790 that the faculty of speech which characterizes human nature is founded upon the social instinct—powerful instinct which necessarily determines him to seek society for its own sake—of humans, and also to Charles Darwin's evolutionary interpretation of the connection between "social instinct" and sympathy.⁸⁾ Putting all accounts together, it may well be said that Smith had already established the modern evolutionary epistemology substantially by 1790.

Smith's concept of the propensity to exchange, therefore, does not stay on the simple level of instinct so far as members within a group exchange favors with each other. According to the modern biology—especially evolutionary ethology, social animals like chimpanzee and bonobo definitely "seek and enjoy company" (de Wall 1996, 170), and behave on the principle of reciprocal exchange or reciprocal altruism, because individuals have "the mental capacity to keep track of given and received favors" and "can apply this capacity to almost any situation" (Ibid., 153–54). Smith's positive recognition of the continuity of reciprocity among members is, it must be observed, reflected in his insistence: "it is by treaty, by barter, and by purchase, that we obtain from one another the greater part of those mutual good offices which we stand in need of" (WN, I.ii.3).

In relation to self-love, however, it must be observed that the self-interest mentioned by Smith on the propensity to exchange is nothing but the other member's self-love. Self-love is understood rather as an external and relative principle which interests other member's self-love, than as an internal prin-

ciple which works separately and independently.

Man has almost constant occasion for the help of his brethren, and it is in vain for him to expect it from their benevolence only. He will be more likely to prevail if he can interest their self-love in his favour, and shew them that it is for their own advantage to do for him what he requires of them. Whoever offers to another a bargain of any kind, proposes to do this. (WN, I.ii.2)

So far as the propensity for exchange gives foundation upon which WN was written, it must not be overlooked that this properly human propensity is the consequence of both self-interest and sociability—social instinct. At that time, Smith had not clear understanding between them yet.

Accordingly, the concept of instinct is more general, broad and basic than the propensity to exchange, since the former is common among all social animals. To put it slightly differently, the propensity to exchange cannot be released without social instinct of animals. In this sense, and in this sense only, Smith follows and accepts Hume's insistence that "reason is nothing but a wonderful and unintelligible instinct in our souls, which carries us along a certain train of ideas, and endows them with particular qualities, according to their particular situations and relations" (Hume [1939–40] 2001, 1.3.16.9), although he does not accept Hume's insistence that "this instinct, 'tis true, arises from past observation and experience (Ibid.)." Smith's conception of instinct, as affirmed above, rigorously excludes all em-

pirical sentiments and knowledge. Smith's own advancement lies in his evolutionary way of understanding human traits; that the human species has not only the fundamental instinct of other social animals but also the additional tracking inclination or disposition grown on it through succeeding experiences.⁹⁾

One thing, however, still requires attention. It is very easy for us to find "population thinking"¹⁰⁾ indispensable to the evolutionary biology in Smith's evolutionary argument that "in the mechanism of a plant, or animal body, every thing is contrived for advancing the two great purposes of nature, the support of the individual, and the propagation of the species. But in these, and in all such objects, we still distinguish the efficient from the final cause of their several motions and organizations" (TMS, II.ii.3.5). This shows explicitly Smith's adequate comprehension of the developmental process of Nature. So long as reciprocity or reciprocal altruism of human being grows into the propensity to exchange, the achievement of the final cause of "the self-preservation, and the propagation of species" will be achieved, since independent and free pursuits of self-love by individuals progressively increase the common stock of the population by the division of labor.

The strength of the mastiff is not, in the least, supported either by the swiftness of the greyhound, or by the sagacity of the spaniel, or by the docility of the shepherd's dog. The effects of those different geniuses and talents, for want of the power or disposition to barter and exchange, cannot be brought into a common stock, and do not in the least contribute to the better accom-

modation and conveniency of the species. Each animal is still obliged to support and defend itself, separately and independently, and derives no sort of advantage from that variety of talents with which nature has distinguished its fellows. Among men, on the contrary, the most dissimilar geniuses are of use to one another; the different produces of their respective talents, by the general disposition to truck, barter, and exchange, being brought, as it were, into a common stock, where every man may purchase whatever part of the produce of other men's talents he has occasion for. (WN, I.ii.5)

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Notes

- 1) Cheselden's report on the recovery after long-term blindness is still mentioned by a modern neuroscientist (Fine 2003, 915).
- 2) Smith's understanding was basically correct even from the modern view of neuroscience. See Kurson (2008), the exciting story of a person who blinded at age three and restored his vision after the stem cell transplant surgery, and was forced to endure long, dangerous and harsh experiences in order to utilize and enjoy his sight.
- 3) There is a very interesting fact that the term "internal sense" consists of the key concept in Francis Hutcheson's Moral philosophy. Hutcheson's definition of it appears in the next argument. "Internal senses are those powers of determinations of the mind, by which it perceives or is conscious of all within itself, its actions, passions, judgments, wills, desires, joys, sorrows, purposes of action. This power some celebrated writers call consciousness or reflection,

which has for its objects the qualities, actions or states of the mind itself, as the external senses have things external. These two classes of sensation, external and internal, furnish our whole store of ideas, the materials about which we exercise that noblest power of reasoning peculiar to the human species (Hutcheson [1747] 1990, 6).” It is certain that Smith does not follow his teacher Hutcheson in this respect.

- 4) In order to show the similarity, I would like to adduce a sentence from ES. “It seems difficult to suppose that man is the only animal of which the young are not endowed with some instinctive perception of this kind. The young of the human species, however, continue so long in a state of entire dependency, they must be so long carried about in the arms of their mothers or of their nurses, that such an instinctive perception may seem less necessary to them than to any other race of animals. . . . Children, however, appear at so very early a period to know the distance, the shape, and magnitude of the different tangible objects which are presented to them, that I am disposed to believe that even they may have some instinctive perception of this kind; though possibly in a much weaker degree than the greater part of other animals” (ES, 74).
- 5) There is an exception of it, and Smith uses the expression “the trucking disposition” (WN, Lii.3). In “Lectures on Jurisprudence: Report of 1962–3” (LJ(A) hereafter), however, “the disposition to truck, barter, and exchange” is used, but in “Early Draft of part of *The Wealth of Nations*” supposedly written in 1762, “the propensity to truck, barter, and exchange” is used.
- 6) In ED, Smith said thusly. “This division of labour from which so many advantages result is originally the effect of no human wisdom which foresees and intends that general opulence to which it gives occasion.

It is the necessary tho very slow and gradual consequence of a certain principle or propensity in human nature, which has in view no such extensive utility. This is propensity, common to all men, and to be found in no other race of animals, a propensity to truck, barter, and exchange one thing for another. That this propensity is common to all men is sufficiently obvious.” (ED, 21)

- 7) This condition seems strict one in Smith, since the trait, being common to “puppy, dogs and humans, to act according to his inclinations, endeavours by every servile and fawning attention to obtain their brethren’s good will” (WN, Lii.2) is not mentioned as instinct in WN.
- 8) It seems better to quote directly from Darwin: Social animals are impelled partly by a wish to aid the members of their community in a general manner, but more commonly to perform certain definite actions. Man is impelled by the same general wish to aid his fellows; but has few or no special instincts. He differs also from the lower animals in the power of expressing his desires by words, which thus become a guide to the aid required and bestowed. The motive to give aid is likewise much modified in man: it no longer consists solely of a blind instinctive impulse but is much influenced by the praise or blame of his fellows. The appreciation and the bestowal of praise and blame both rest on sympathy; and this emotion, as we have seen, is one of the most important elements of the social instincts. Sympathy, though gained as an instinct, is also much strengthened by exercise or habit. As all men desire their own happiness, praise or blame is bestowed on actions and motives, according as they lead to this end; and as happiness is an essential part of the general good, the greatest-happiness principle indirectly serves as a nearly safe stand-

ard of right and wrong. As the reasoning powers advance and experience is gained, the remoter effects of certain lines of conduct on the character of the individual, and on the general good, are perceived; and then the self-regarding virtues come within the scope of public opinion, and receive praise, and their opposites blame. (Darwin [1871] 1874, 611)

- 9) It seems worthwhile to note Thomas Reid who strongly attacked Hume's empiricism. Reid recognized the importance of instinct as a constituent power of the mind and "utilized that conception of that instinct to combat Humean skepticism (Wood 1989, 98)." But Reid's conception of instinct is quite different from Smith's. Reid viewed instinct as a blind impulse to actions, mechanically and physiologically. Breathing, sucking and swallowing of a new-born child, butting of a bull, kicking of a horse, biting of a dog, therefore, constitute instincts for their self-preservation by God. Reid's argument that "the merciful author of our nature, has adapted our instincts to the defects, and to the weakness of our understanding" (Reid [1788] 1969, 108) evidently indicates his fundamental position is not biological but philosophical.
- 10) E. Mayr's remark seems very important. "Darwin eliminated any reliance on supernaturalism and provided the explanatory models that made this possible. Equally important was his refutation of essentialism and its replacement by population thinking. It established a new emphasis on variation, on a potential for change, and on the uniqueness of individuals. It was this population thinking that made the theory of natural selection possible. Philosophers have not yet quite caught up with all the consequences of these revolutionary new ideas (Mayr 1988, 264)."

Abbreviations of the works of Adam Smith

(Citations from his works are shown by each paragraph number, not page.)

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