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# Imagination and Estimation: Arabic Paradigms and Western Transformations\*

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## 1. Introduction

Although it is generally acknowledged that philosophers in the Latin West received their schemata of the internal sense powers from the philosophers of the Islamic world, it is often assumed that the presentations of the internal senses by Latin philosophers accurately represented the views of their Arabic sources.<sup>1</sup> Yet on a number of key issues this was not the case: Latin authors often failed to recognize the complexity of the functions assigned to the internal senses in the psychology of their Arabic predecessors and they often minimized or misunderstood the nature of the disagreements over the internal senses between their two principal sources, Avicenna and Averroes. Of particular importance in this regard was the Western understanding of the internal sense faculty of “estimation” (*wahm/aestimatio*), which originated with Avicenna and which Averroes rejected as a superfluous addition to the authentically Aristotelian faculty of imagination (*phantasia*). In its Avicennian guise, estimation played an important role in accounting for features of both animal and human cognition. In particular, Avicenna posited a human estimative faculty in addition to the intellect in order to account for a variety of complex human judgments that are pre-intellectual but more than merely sensible.<sup>2</sup> In the West, however, the distinctively human aspects of estimation were by and large ignored. Estimation was viewed primarily as the animal counterpart of the practical intellect, or it was replaced in humans by the cogitative faculty, which in Avicenna’s philosophy had a cognitive function entirely distinct from that of estimation. By the same token, Averroes’ rejection of Avicennian estimation was usually reduced to a taxonomic disagreement over whether there were four or five internal sense powers and little attention was paid to the fundamental differences between Averroes’ and Avicenna’s understanding of the cogni-

tive functions of the individual internal senses. In what follows I will examine two such 13th-century interpretations of the internal senses in the light of this Arabic background, those of Albert the Great and Thomas Aquinas, and I will attempt both to isolate the reasons why they modified their Arabic sources and to assess the philosophical consequences of their revised positions.<sup>3</sup>

## 2. The Avicennian paradigm<sup>4</sup>

Although the medieval doctrine of the internal senses is often treated as merely physiological and descriptive, Avicenna himself deduces the number of internal sense powers by appealing to three epistemological principles of faculty differentiation:<sup>5</sup>

1. For every different type of sensible object, there must be a distinct faculty which perceives it. The objects of internal sensation include two such distinct types of objects, the forms or images of the common and proper sensibles (*ṣuwar al-maḥsūsāt*), and the “intentions” of those sensibles (*ma‘ānī al-maḥsūsāt*).
2. Faculties which have free reign (*taṣarruf*) to manipulate their objects actively must be differentiated from faculties whose objects are merely passively imprinted on them, since passivity and activity are mutually exclusive.<sup>6</sup>
3. Finally, the same faculty cannot both receive and retain a sensible object, since reception requires a malleable substrate whereas retention requires a stable one.<sup>7</sup>

Applying these principles,<sup>8</sup> Avicenna generates a scheme of internal senses which includes two receptive-retentive pairs conjoined by the active power of compositive imagination: (1) The common sense (*al-ḥiss*



*al-mushtarak*) receives sensible forms from the external senses and the formative or retentive imagination (*al-muṣawwirah/al-khayāl*) retains their images;<sup>9</sup> and (2) the estimative faculty receives intentions and the memorative faculty (*al-dhākirah*) retains them. Finally, the compositive imagination (*al-mutakhayyilah*) composes and divides both forms and intentions with one another. Avicenna appears to view the activities of the compositive imagination as random and undirected in themselves, perhaps even subconscious. Inasmuch as it is inherently active, the compositive imagination does not appear capable of being “shut off” and thus its activities predominate when the animal is asleep, in the form of dreams.<sup>10</sup> The compositive functions of imagination can, however, be consciously harnessed and controlled by either the estimative faculty or reason, and when the latter is the case this faculty functions not as imagination, but as the cogitative faculty (*al-mufakkirah*). Thus, while there is only a single compositive imagination in any sensible soul, animal or human, in human souls this single faculty has two different aspects or manifestations depending upon whether we are considering it in relation to the controlling influence of reason or of estimation respectively.<sup>11</sup>

Avicenna’s claim that there are properties called “intentions” or “meanings” that are associated with but distinct in kind from sensible forms and images is perhaps the most well-known aspect of his account of the estimative faculty.<sup>12</sup> Yet what exactly counts as an intention is never fully spelled out by Avicenna in his writings on the internal senses. This situation is further complicated by the fact that *ma‘nan* is a well-known technical term in Arabic philosophy meaning a form or nature as apprehended and thus denoting the object of any cognitive faculty. On this generic meaning, sensible forms, images, and universal intelligibles are all “intentions,” and it is, of course, from the Latin translation of *ma‘nan* as *intentio* that contemporary philosophy ultimately derives its conception of intentionality as meaning the directedness of mental states towards objects.<sup>13</sup> It is not entirely clear why Avicenna chose to use this term to cover the proper objects of the estimative faculty as well. Perhaps he wished to emphasize the special affinity between the objects of the estimative faculty and intelligible ideas, or perhaps he viewed an estimative intention as conveying what the sensible form “signifies” or “means” to the percipient subject. Unfortunately, however, he makes neither such association explicit.<sup>14</sup> But his decision to use the same term

in both cases generates an equivocation which Avicenna himself never addresses, one which opened the door to succeeding philosophers to interpret the notion as they themselves saw fit.

When Avicenna does attempt to explain what estimative intentions are, the explanation is largely in negative terms: intentions are properties that are “not in their essences material” (*laysat hiya fī dhāti-hā bi-māddīyatin*),<sup>15</sup> although they attach or adhere to sensible, material forms and are always perceived in conjunction with them.<sup>16</sup> Avicenna also tends to let his examples – most famously that of the sheep perceiving hostility in a wolf – bear the brunt of explaining what an intention is.<sup>17</sup> Most of those examples involve properties related to appetite and motion, such as pleasure and pain. On the basis of these examples, Avicenna argues that intentions cannot be material properties on the grounds that while sensible forms like color, shape, etc. belong essentially and exclusively to material bodies, affective properties like good and evil are only incidentally found in bodies, since they can also be understood by the intellect in total abstraction from matter.<sup>18</sup>

Avicenna’s underlying rationale for positing the existence of intentions as distinct objects from sensible forms is that since each of the external senses is correlated with a single sensible quality – vision with color, hearing with sound, and so on – external sensation as a whole can only perceive the five proper sensibles and the other physical qualities that are directly manifested by them, the latter being the common sensibles of motion, shape, and magnitude. Hence the sheep cannot literally be said to “smell danger” in the scent of the wolf or “see hostility” in the wolf’s eyes, because smell only perceives odors and vision colors and shapes. Rather, concomitant with its seeing and smelling the wolf, the sheep must perceive these “intentions” of hostility and danger directly through another faculty, its estimative faculty. It seems obvious, moreover, that one of the main reasons why Avicenna often provides examples of estimative intentions drawn from the animal kingdom is that if even non-rational animals can be shown to perceive aspects of their environment that exceed the perceptual capacities of the senses and imagination, the objection that such perceptions are really intellectual ones can be forestalled from the outset. Yet Avicenna also makes it abundantly clear that “without a doubt this faculty exists in us.”<sup>19</sup> Human animals too have an estimative faculty to which Avicenna assigns a

multitude of cognitive functions that I can only sketch in outline here. Of these functions, some are peculiarly human and result from the co-presence of the intellectual and estimative faculties in the human soul, whereas others are presumably common to both humans and animals, although Avicenna is again somewhat vague as to the status of several of them. What is clear, however, is that all of these additional functions are rooted in Avicenna's identification of estimation as the highest and ruling faculty in the animal soul, a role which Avicenna often describes in the language of judgment and control, and one which leads him by times to attribute to the estimative faculty responsibility for all the perceptual capacities in the sensitive soul.<sup>20</sup>

Foremost amongst the additional judgments assigned to the estimative faculty are those that involve Aristotelian incidental perception, which Avicenna links to estimation by broadening the notion of an intention to cover any property which, while being conveyed to the percipient through a sense faculty, is not actually affecting any sense organ "at the time of judgment" (*waqt al-ḥukm*), as when I "see" that the yellow object is honey and sweet. Such incidental perceptions require an appeal to intentions because there is nothing in the occurrent perceptual act that can account for the sensible judgment that issues from it. The eye can see neither honey nor sweetness, and yet the perceiver can visually recognize that "the yellow is sweet." In such a case, even though the object of perception is in its own nature a sensible, it is not a sensible *for* the particular sense organ that is being exercised. So, like inherently non-sensible qualities, these sensibles too must be conveyed to the percipient not inasmuch as they are sensibles, but inasmuch as they are non-sensible intentions accompanying a sensible form.<sup>21</sup>

Although Avicenna does not explicitly say so, it appears that incidental perception is an estimative function that is common to animals and humans. Closely connected to estimation's role in explaining incidental perception is Avicenna's identification of the estimative power as the apperceptive faculty in the animal soul and the sole vehicle of whatever self-awareness there is in non-human animals.<sup>22</sup> In human beings, however, "estimation possesses special judgments" as well which, by their very nature as estimative, are often in conflict with the judgments proper to reason. Such beliefs are identified by Avicenna as those that terminate in the absolute denial of any reality beyond the physical realities that can be depicted under a sensible form. They occur in

humans, Avicenna argues, because although the estimative faculty has non-sensible intentions as its proper objects, it only possesses those intentions when they are conjoined with particular sensible forms represented in the imagination, thereby compelling estimation to "impede the existence of things which cannot be imagined and are not imprinted in [the imagination], and to refuse assent to them."<sup>23</sup>

Similar conflicts between estimation and reason may also occur in the practical realm, as when we react viscerally to a repulsive suggestion even when it is overridden by the intellect, and generally in all cases of akratic behavior in which a sensitive reaction overtakes our ability to respond rationally to our appetites. Avicenna has a favorite metaphor to illustrate how estimative judgments can affect our reactions to an object even when overridden by the intellect: a person might judge the honey on the table to be repulsive because someone has remarked to her that it looks like bile. The honey and the bile look alike superficially when presented to the senses, and so when the estimative faculty correlates the appearance of honey with the intention appropriate to bile, i.e., disgust, the animal soul naturally reacts adversely. In the case of human perceivers, even if the intellect falsifies the estimative associations (that is, if I know full well that this is honey before me), our appetitive reactions will still automatically follow the estimative judgment (so that I lose my appetite for the honey), because the appetites in question are sense appetites and instinctively supervene upon the perception of an intention.<sup>24</sup>

The reason why both these types of erroneous estimative judgments occur is simply that on Avicenna's view estimation is found in humans along with reason. Since estimation functions as the "director and judge in the animal," humans in effect possess two competing judgmental faculties, each of which has hegemony in its own sphere. Insofar as it is autonomous in the animal soul, estimation treats the sensible and imaginable as the measure of reality and naturally tends to deny the existence of anything that is not particular and material. Nonetheless, since estimation is not intellect, its judgment is "not decisive" (*laysa faṣṣan*) and can be overridden, but if it gains ascendancy in the human soul, it will issue erroneous judgments.<sup>25</sup> Lest we think, however, that the human estimative faculty serves only as an impediment to rational behavior, Avicenna also allows that estimation may "become almost rational" in humans.<sup>26</sup> In such cases, the cooperation between

estimation and reason allows human animals to deepen their theoretical understanding of the physical world as physical,<sup>27</sup> to cultivate an aesthetic perspective on the world around them,<sup>28</sup> and to transform their animal appetites into peculiarly human emotions, among which Avicenna includes shame, laughter, and crying.<sup>29</sup>

### 3. Averroes' modifications of Avicenna

Averroes' most important modifications of the Avicennian internal senses can for our purposes be reduced to two:<sup>30</sup>

1. Averroes rejects entirely the Avicennian faculty of estimation in both animals and humans, viewing it as superfluous in animals and replacing it with cogitation in humans.<sup>31</sup> In his late work, the *Tahāfut al-tahāfut* (which was not available to the West in the 13th century), Averroes explicitly treats Avicennian estimation as a substitute for cogitation in animals, and he argues accordingly that it is a superfluous accretion to Aristotle's view of imagination. The Aristotelian account of imagination is sufficient in Averroes' view to explain how it is that animals perceive objects as pleasant or painful, and thus to explain in turn the basic animal motions of pursuit and avoidance.<sup>32</sup>

As a result of this rejection of Avicennian estimation, the total number of internal senses in humans is reduced by Averroes to four: the common sense; imagination (combining both its retentive and compositive functions); the cogitative faculty; and the memorative faculty. In actual fact, however, Averroes has eliminated not one, but two internal sense powers, namely, compositive imagination as well as estimation, assigning their various functions to either imagination or cogitation in humans, and apparently leaving non-human animals with only two internal sense faculties, i.e., the common sense and imagination.<sup>33</sup>

2. Like Avicenna, Averroes accepts the existence of intentions as distinct perceptual objects from sensible forms or images, but he associates them with the cognitive operations of cogitation and memory. In Averroes, moreover, the association of intentions with affective properties, such as friendliness and hostility, disappears entirely. Although Averroes does consider intentions to be more spiri-

tual, that is, more immaterial, than images or forms, he no longer characterizes them as essentially non-sensible properties. Instead, Averroes identifies an intention as that which conveys awareness of an individual *as* an individual, a function that is merely implicit in Avicenna's association of intentions with incidental perception. For Averroes these individual intentions play a fundamental role in the articulation of two basic aspects of Aristotelian psychology to which I will now turn, the first of which is incidental perception, and the second memory.

Averroes introduces intentions into his account of incidental perception in the *Great commentary on De anima* 2.6 as the items which the cogitative faculty "separates" (*distinguit*) from imagined forms and "strips" (*expoliat*) of the proper and common sensibles. Averroes' examples of such intentions are "this individual human" and "this individual horse," and "in general the intention of each of the ten individual categories."<sup>34</sup> In sharp contrast to Avicenna, Averroes asserts that the perception of such intentions is restricted to the senses of humans and for this reason their abstraction can be assigned to a distinctively human power which by its very nature is under the influence of reason, namely, the cogitative faculty:<sup>35</sup> "And this seems to be proper to the senses of human beings, for which reason Aristotle says, in the *Parva naturalia*, that the senses of the other animals are not like the senses of humans, or something to this effect."<sup>36</sup>

This conception of individual intentions is explained in considerably more detail in Averroes' early work, the *De memoria* chapter of his *Epitome of the Parva naturalia*, where the notion of an intention is analyzed with explicit reference to the formation of memory-images.<sup>37</sup> On this account a memory-image is composed of an image of the thing remembered together with its intention,<sup>38</sup> the former of which is perceived by the imaginative faculty, and the latter by the memorative faculty. Averroes illustrates the difference between the image and the intention with the example of a memory-image of a person, say, Zayd. The image of Zayd corresponds to those of his external, sensible qualities that could be depicted by a painter, whereas the intention represents him as "this ostensible individual" (*al-shakṣ al-mushār ilay-hi*).<sup>39</sup> Averroes also describes the intention metaphorically as the "fruit" of the remembered object, and the image as its "rinds." Finally, memory requires a third cognitive act in addition to the perceptions of the

image and the intention, namely, the composition of the image and the intention with one another, constituting a judgment that the two refer to one and the same thing, for example, that this is a picture of Zayd, and not just of some man.<sup>40</sup> This judgmental act is assigned by Averroes to the cogitative faculty.

Now although Averroes offers this analysis principally in order to explain how memory works, it is important to recognize that he also holds that all three of these elements must be present in any complete act of sense perception whereby a sensible particular is grasped as an identifiable individual matching a particular physical description. This means that while the memorative faculty is named for the central role that it plays in accounting for memory, its functions are in no way confined to the acts of remembering or retaining what is past. Rather, memory also plays a central role in the process of sensible analysis (*tahlīl/tafṣīl*) through which all knowledge of particular individuals is acquired. In this abstractive process the external senses first perceive the external object and transmit their data to the common sense;<sup>41</sup> the formative or imaginative faculty then forms an image of the sensible object; the cogitative or discriminative faculty (*al-mumay-yizah*)<sup>42</sup> separates the intention of that object from its physical description as contained in the image; and finally the memorative faculty receives the intention thus abstracted.

This picture of the basic functions of the internal senses is markedly different from the one painted by Avicenna, and it is linked directly to Averroes' radical reinterpretation of the nature of sensible intentions. It also illustrates why the cogitative faculty in Averroes' system cannot simply be taken, as it often is, as a substitute for estimation in the Avicennian scheme. In Avicenna, the estimative faculty perceives intentions directly – no abstractive process is posited prior to the reception of intentions by the estimative faculty, since intentions are not viewed by Avicenna principally as the individual “fruits” that can only be reached once the rinds that cover them have been peeled away.<sup>43</sup> They accompany sensible images and forms not so much as their underlying subjects, but as supervenient properties that escape the notice of the external senses themselves. Moreover, in Avicenna the memorative faculty is nothing but a storehouse for estimative intentions, and it possesses no distinct cognitive abilities of its own.<sup>44</sup> Averroes, by contrast, explicitly assigns to the memorative faculty the sole ability to receive and perceive the

individual intention stripped of all its rinds. Memory for him is not primarily a storehouse, but a perceptive faculty that has intentions as its proper object. And by the same token, the cogitative faculty is not for Averroes the faculty that explains our awareness of intentions, but rather, it is simply an abstractive or combinatory faculty that prepares the intention to be received by the memorative faculty. On Averroes' account, then, it is only through memory that we perceive individuals, and memory is the most spiritual faculty precisely because the perception of individuality is the limit of abstraction in the sensible soul, the sensible counterpart to the abstraction of a universal essence.

#### 4. Albertus Magnus: Estimation as animal practical intellect

Albertus Magnus has two extensive treatments of the internal senses in his psychological writings, composed roughly ten years apart,<sup>45</sup> the first found in the *De homine* part of the *Summa de creaturis*, and the second in his commentary on Aristotle's *De anima*.<sup>46</sup> A distinguishing feature of Albert's account of the internal senses throughout the *De homine* is the understanding of estimation and phantasy – his preferred label for the compositive imagination – as the sensible soul's analogues to the practical and speculative intellects:<sup>47</sup> “To receive the intention by way of speculative truth alone differs from receiving the same thing under an appetible or detestable notion (*ratio*); and phantasy receives the intention in the first way, the estimative power in the second.”<sup>48</sup> Albert carves out this view in response to objections that the function of the estimative faculty in providing the sensible appetites with their desired or repudiated objects makes estimation a motive rather than a cognitive power.<sup>49</sup> Albert's own solution to the motive-cognitive dichotomy is to concede something to each side by way of an analysis of the hybrid character of practical cognition. Like the practical intellect the estimative faculty displays characteristics that are both apprehending and motive. Inasmuch as the operations of estimation involve the reception of some species as a “principle of cognition” (*principium cognitionis*) estimation is an apprehending power, even though simple knowledge of the object is not the primary end at which its activity aims. Conversely, on the strictest sense of “motive,” only those powers which immediately effect a physical movement in a bodily



organ, that is, the appetitive powers, are motive. Nonetheless, practical cognitive powers like the practical intellect, “practical phantasy” (*phantasia practica*), and estimation are motive in a looser sense, inasmuch as their cognitive operations effect motion mediately through the appetites with which they are aligned.<sup>50</sup>

One consequence of Albert’s interpretation of estimation as the animal analogue of the practical intellect is that it makes estimation dependent upon phantasy in the same way that the practical intellect is, in Albert’s view, dependent upon a prior theoretical grasp of its object: “[T]he estimative is a power following upon phantasy and distinct from it, for it is that which determines pursuit and avoidance in regard to apprehended intentions, which intentions, I say, are conjoined to the composition and division of phantasms, although they are not received from the senses.”<sup>51</sup> In the temporal order, then, it is phantasy which has the primary relation to intentions, and only after phantasy has acted upon images with the purpose of “composing and dividing them in order to elicit true and false intentions” is the estimation able to use these intentions to direct animal motion.<sup>52</sup> This model in itself constitutes a marked departure from Avicenna, for Albert has completely reversed the order of priority between the powers of phantasy and estimation inasmuch as they share provenance over intentions. In Avicenna, the intention is the proper object of estimation alone, and quite probably estimation is credited with the sole ability to perceive the intention; compositive imagination deals with intentions only to the extent that they are included among the items over which the compositive imagination has its free reign – a free reign which is, however, subject in its own turn to the control of estimation in its function as the ruling and judgmental power in the animal soul, and the only counterpart to the intellect in the animal soul.

This picture of estimation as the animal analogue to the practical intellect also reappears in Albert’s various digressions on the internal sense powers in his later commentary on Aristotle’s *De anima*. However, it is now retentive imagination, rather than compositive imagination or phantasy, that is designated as the animal analogue to the speculative intellect.<sup>53</sup> This shift in Albert’s interpretation of the nature of phantasy also affects his understanding of the functions of estimation, which is assigned the dual role of abstracting intentions and determining motion with respect to them. This in turn allows Albert to offer a new rationale for his view

that phantasy rather than estimation holds the rank of “the greatest cognition which the sensible soul possesses and the summit of its power.”<sup>54</sup> The most basic reason for the relative ranking of these powers is that while all animals possess both estimation and imagination, only the most perfect possess phantasy or compositive imagination.<sup>55</sup> More importantly, however, given his revised position on the functions of phantasy, retentive imagination, and estimation, Albert can now establish the rankings of these powers on the basis of the varying degrees of activity and passivity in their respective operations. Thus estimation is higher than retentive imagination because the latter power is purely passive, whereas estimation is active inasmuch as it abstracts intentions: “But estimation is more active than the imaginative [power], because to extract intentions is to make something and it is more perfect than to consider images alone, as if we were to say that an animated mirror were to consider the images impressed upon it.” Still, estimation retains an element of passivity “inasmuch as it does not act through itself but through an intention which it extracts from the acquired form,”<sup>56</sup> whereas phantasy, as compositive, is by its very nature active.<sup>57</sup> Perhaps most surprising against the Avicennian background, however, is Albert’s transference of not only the rank of estimation, but also its ruling function, to phantasy. Whereas Avicenna repeatedly declares that estimation, as the principal judge in the animal soul, uses all the other internal senses as its instruments and can to this extent claim even their activities as its own,<sup>58</sup> Albert substitutes phantasy for estimation as the root power within the sensible soul: “[I]t seems that the entire formality of the sensible power is in phantasy . . . ; and in this way all these internal powers of the sensible soul seem to reside in one common essence and substance, but they differ according to their material being in the diverse parts of the brain in which these powers, all of which are organic, are arranged.”<sup>59</sup>

Albert’s *De anima* commentary is of special significance, however, not so much for its revised view of the relations between the retentive and compositive imaginations and its continued elevation of phantasy over estimation, but rather for its clarification of Albert’s understanding of the nature of intentions. Albert’s account of intentions starts off on familiar Avicennian grounds, so that intentions are treated as properties that are not imprinted on or apprehended by the senses themselves, but which nonetheless always accompany sensibles. The examples given of intentions here are the

standard ones related to appetite, such as friendliness, affability, and their opposites, but in addition to these Albert also includes examples of incidental perception, such as our understanding “this to be the son of Dion and to be a lamb or a human, but that to be a wolf or a lion.” This sort of awareness, Albert declares, always involves the concomitant grasp of “substantial forms” apprehended through the mediation of the senses, and for this reason it never occurs “without estimation and collation.”<sup>60</sup>

In contrast to his *De homine* account, then, Albert appears here to make estimation alone responsible for the perception of all intentions, whether practically oriented or not, and he makes no mention of phantasy as the power which treats of intentions in a purely speculative way, a point which seems somewhat at odds with his continued identification of estimation as the analogue of the practical intellect. This suggests that Albert believes that there is some unifying thread that underlies the perception of affective qualities and incidental perception and that necessitates interpreting both as instances of the perception of intentions, and that unifying thread seems to lie in their shared presupposition of some ability to grasp an object as an individual, since Albert argues later in the text that “no wolf would ever have pity over its offspring unless it had knowledge both of this individual and of the fact that this individual is its offspring.”<sup>61</sup>

But how does Albert understand this presumed connection between intentions and individuality? Is an intention just the representation of an individual as such, as it is for Averroes? Apparently not, for Albert explicitly declares estimative intentions to be entirely equivalent to intentions understood in the generic sense, that is, as designating objects insofar as they are present in *any* cognitive faculty. Unlike Avicenna, then, Albert does not understand a “form” in this context, as contrasted with an intention, to be a proper or common sensible, but rather, he takes form in its metaphysical sense to mean “that which, by informing, gives being in act to matter and to the composite of matter and form.” In contrast to this metaphysical sense of form, then, an intention just is the representation of the thing to some cognitive faculty: “But that through which a thing is signified individually or universally according to the diverse grades of abstraction is called an intention; and this does not give being to anything nor to the sense when it is in it, but rather, it gives a sign and knowledge of the thing.”<sup>62</sup>

But how does this understanding of intentions help to explain the assignment of both practical sensibility and incidental perception to the estimative faculty? Although Albert seems to take this for granted in large part, an explanation can be gleaned from his remarks on how incidental perception involves the grasp of an object in its total substantiality. Albert argues that because an intention is formed by the reception of a sign of the object into some cognitive faculty, it is, unlike the form through which it is conveyed, representative of the object as a whole and not merely of some part of it:

And therefore the intention is not a part of the thing like the form, but rather it is the species of the whole knowledge of the thing. Thus, because the intention is abstracted from the whole and is the signification of the whole, it can be predicated of the thing; for the intention of the colored thing, which is in the eye, makes known the whole thing, just as the intention which is in the imagination makes known the particular which is not present.<sup>63</sup>

That is, while the eye itself is only able to see the form of color, it does so in virtue of the entire colored thing assuming intentional being in the power of vision. It follows, then, that to the extent that any cognitive faculty, including an internal sense faculty, can perceive the intention that is conveyed through the sensible form, it will thereby be able to grasp the whole individual object as represented in the intention.

Albert’s reduction of estimative intentions to the apprehension of intentional being as such may be viewed as a fusion of the Avicennian and Averroist understanding of the function of intentions in the cognitive operations of the sensitive soul. We have seen that Avicenna does indeed link the estimative faculty’s apperceptive functions within the animal soul to its concern with intentions, and he does identify some types of intentions as properties which represent the individual as an integral whole. But Averroes elevates this function of Avicennian intentions to the centerpiece of his own account of sensible abstraction, identifying an intention as nothing but what makes an individual to be this designated individual. And although Albert does not explicitly tell us how his conception of intentions explains their association with affective and appetitive properties, the key seems to be that Albert takes estimation to be primarily interpretive rather than merely perceptual. The picture that emerges is one in which the estimative faculty is imbued with the power to recognize any sensible species as a representation of a complete individual, a power which it has in virtue of

its ability to perceive the sensible species as possessing intentional or cognitive, rather than real, being. And once it has apprehended that individual as an integral whole, it is able in turn to judge whether it is an enemy or a friend, and to adopt the appropriate stance towards it.

### 5. Thomas Aquinas and the hybridization of Avicenna and Averroes<sup>64</sup>

Although he has very few texts devoted to the internal senses, most of which are brief, Aquinas' general prominence as a philosopher and a theologian has made his account the most well-known amongst historians of philosophy and general medievalists. Aquinas' treatments of the internal senses can be divided into two main groups: (1) general sketches of the place of the internal senses amongst the soul's faculties, especially question 13 of the *Quaestiones disputatae de anima*,<sup>65</sup> and *Summa theologiae* 1.78.4;<sup>66</sup> and (2) appeals to the internal sense tradition in Aquinas' commentary on Aristotle's *De anima*.

In both of his general presentations of the theory of the internal senses Aquinas accepts the basic Avicennian framework while rejecting certain of its specific features in favor of the Averroist alternative.<sup>67</sup> Like Avicenna, Aquinas attempts to justify his own version of the internal sense tradition by deducing the distinction of inner faculties according to a determinate set of principles. Unlike Avicenna, however, Aquinas does not appeal to epistemological principles directly, but rather, to the teleology of nature.<sup>68</sup> That is, since sensible cognition, both internal and external, is proper to an animal *qua* animal and constitutive of its specific nature, animals must be equipped with sufficient sensible capacities to allow them to live a complete animal life.<sup>69</sup>

In the ensuing deduction of the internal sense faculties, Aquinas retains the estimative faculty, in contrast to Averroes, but like him he rejects a separate faculty of phantasy or compositive imagination. Aquinas also takes a further step away from Avicenna by identifying estimation as a faculty found only in lower animals. But in keeping with Averroes and in contrast to Albert, Aquinas retains the cogitative faculty as fulfilling in humans the same function that estimation fulfills in animals, and it becomes in many respects the focal point for Aquinas' interest in the internal senses in the

explanation of human cognition.<sup>70</sup> Thus, Aquinas and Averroes have in common the fact that both reduce the total number of internal senses that can be present in perfect animals (or at least in humans) to four.<sup>71</sup> But since Aquinas accepts the legitimacy of Avicennian estimation, he recognizes a total of five different internal senses, only four of which are ever found conjoined together in either the human or the animal soul: common sense, retentive imagination, estimation *or* cogitation, and memory.

The appeal to natural teleology as the underlying rationale for positing the various internal sense powers is particularly prevalent in Aquinas' acceptance of an estimative faculty in animals. Indeed, Aquinas' defense of the estimative faculty is quite distinctive, although it includes among its assumptions a number of Avicennian principles. Aquinas begins by taking Avicenna's familiar examples of sheep and wolves as entirely definitive of the functions of the estimative faculty, recognizing no human manifestation of the power at all. Estimation just is an animal's ability to discern in its environment which things are natural enemies and allies, and which objects are suitable to serve as the raw materials for its provision of shelter and other necessities of life.<sup>72</sup> Moreover, estimation is purely practical for Aquinas as it was for Albert, but in Aquinas this now emerges as a consequence of the limitation of the estimative power to non-rational animals, since it is assumed by Aquinas that animals only perceive intentions insofar as they are relevant to their survival.

What Aquinas focuses on in his personal defense of the distinctiveness of intentions and their correlation with a special internal sense faculty is the different ways in which an animal's motions and appetites are affected by its environment. Indeed, although he had no knowledge of Averroes' attack on Avicennian estimation in the *Tahāfut*, Aquinas' teleological arguments in the *Summa theologiae* are framed in such a way as to answer concerns such as those raised by Averroes regarding the superfluity of estimation in the context of Aristotelian psychology. In contrast to Averroes, Aquinas argues that an animal's immediate reaction to the sensation of an object as pleasant or painful is quite different from its instinctive reaction of flight or attraction to its natural enemies and allies. To perceive a sensible or its image as pleasant or painful is simply to register it as agreeable or disagreeable to the sense organ, in the way that one sound may be pleasing and



another cacophonous. We might call such a reaction purely aesthetic, although this is not Aquinas' own term.<sup>73</sup> Aquinas concedes that "if an animal were moved by pleasing and disagreeable things only as affecting the sense, there would be no need to suppose that an animal has a power besides the apprehension of those forms which the senses perceive, and in which the animal takes pleasure, or from which it shrinks with horror."<sup>74</sup> But sheep do not flee from wolves because they find them ugly, but rather because the wolf is a natural enemy of the sheep. The recognition of sensible forms as useful rather than as merely agreeable is distinct in kind, and therefore it requires the positing of an estimative faculty distinct from the imagination.<sup>75</sup>

If Aquinas disagrees with Averroes over the need for an animal faculty of estimation, he concurs with Averroes in rejecting the existence of a separate faculty of compositive imagination in animals.<sup>76</sup> He also follows Averroes in retaining the cogitative faculty, which he understands to be the human counterpart to animal estimation – a view that has come to represent for many casual readers *the* medieval understanding of the differences between these powers. Yet Aquinas' remarks on the differences between cogitation and estimation seem to have the unintended consequence of undermining the status of animal estimation as a complete cognitive faculty, inasmuch as Aquinas now asserts that while there is no difference at all between the other external and internal senses of humans and animals – each is affected in the same way by sensible forms – when intentions are involved human and animal perceptions differ essentially. The estimative faculty of animals perceives intentions, Aquinas admits, but it does so by instinct alone, whereas in humans intentions are discovered "by means of a certain comparison" (*per collationem quandam*), and "by inquiry and deliberation" (*per inquirendo et conferendo*).<sup>77</sup> This, Aquinas reminds us, is the reason why the human cogitative faculty is often called *ratio particularis*, since it compares individual intentions just as intellectual reason compares universal concepts.<sup>78</sup> Presumably what Aquinas wishes to emphasize here is that when animals perceive the intentions of hostility, love, and the like, they do so without reflection, and perhaps even without full awareness that this is an enemy or that is a loved one. Despite his defense of the existence of the animal estimative faculty, then, Aquinas appears to agree with Averroes that animals possess at best an inchoate sense of individuality, as manifested in their appetitive

reactions to their surroundings, whereas once again humans alone are accorded full awareness of the intention as designating the individuality of what has been perceived.

Such an interpretation of Aquinas' remarks in the *Summa theologiae* on the differences between cogitation and estimation is reinforced by his discussion of the incidental sensibles in the commentary on *De anima* 2.6. Following the lead of Averroes and Albert, Aquinas draws upon the cogitative faculty to supplement Aristotle's account of human incidental perception, and in accordance with his own principles Aquinas also allows a role for the estimative faculty in accounting for a limited type of incidental perception in animals.<sup>79</sup>

Aquinas begins his consideration of incidental (*per accidens*) perception with an account of the conditions under which an object of perception may be identified as incidental. Aquinas is concerned to refute the view that *all* the properties accompanying an essential (*per se*) sensible are incidental to it. That is, Aquinas wishes to rule out the claim that if I see a white object at time *t*, then at *t* I can also be said to perceive incidentally all of the other properties that happen to belong to the individual in which the whiteness subsists. To counter this view, Aquinas stipulates that for a property to count as an incidental sensible it is not sufficient that it happen to accompany a *per se* sensible, but the percipient must also *consciously* apprehend the incidental percept at the time of apprehending the *per se* sensible which it accompanies.<sup>80</sup> So if I don't notice at time *t* that this white object is Socrates, Socrates is not an incidental percept of mine at time *t*. But this implies, Aquinas argues, that in every act of incidental perception there must always be a *second* cognitive faculty for which the incidental percept is a *per se* object, in order to explain why some properties and not others are incidentally perceived.<sup>81</sup> Given this condition, moreover, we can also infer that if there are any objects of incidental perception that cannot be counted as either intelligibles or as other *per se* sensibles, then another faculty must be posited which has these properties as its proper and essential objects. On these grounds, then, it seems that Aristotle's text itself points to the need for positing a faculty which apprehends natures, not as universals, but as present in singulars, i.e., an estimative or a cogitative power. Like Averroes, Aquinas identifies the type of incidental perception that requires cogitation and estimation as involving the perception of a sensible as a "this" (*hic homo/hoc animal*), rather than as an instance

of the nature itself that it is perceived *as* being (*homo, animal, vivere*): “But if it is apprehended in a singular, so that when I see something colored, I perceive this human being or this animal, an apprehension of this sort comes about in a human being through the cogitative power. . . .”<sup>82</sup>

Having initially identified the object of such incidental perceptions in terms of human cognition, in the remainder of this account Aquinas defends the status of intentions as sensible properties.<sup>83</sup> In this context Aquinas explicitly identifies animal perceptions of utility and harm as instances of incidental perception, perhaps following a point implicit already in the views of his teacher Albert.<sup>84</sup> On this view irrational animals are only able to perceive the *intentio individualis* “through natural estimation, according to which the sheep, through hearing or sight, sees her offspring, or something of this sort.”<sup>85</sup> But Aquinas’ explication of how these estimations involve the grasp of individual intentions makes clear his continued reluctance to attribute to animals any authentic or conscious awareness of individuality as such.

Indeed, despite the fact that the cogitative faculty was apparently introduced in this context to explain the incidental perception of an individual, Aquinas argues that even in humans the recognition of individuality is a function of the connection between the cogitative power and reason, insofar as the latter alone is capable of grasping universals. The cogitative power itself only apprehends the individual “as existing under the common nature, which happens to it inasmuch as it is conjoined to the intellective power in the same subject; hence it knows this human being inasmuch as it is this human being, and this stick inasmuch as it is this stick.”<sup>86</sup> By contrast, since the estimative faculty is unable to apprehend the individual as an instance of a nature, it is only able to perceive the individual “inasmuch as it is the term or principle of some action or passion.” That is, the sheep apprehends this lamb, “not inasmuch as it is this lamb, but inasmuch as it is to be nursed by her; and she perceives this plant inasmuch as it is her food.”<sup>87</sup> As was the case with Albert, then, animal estimation, if not human cogitation, seems completely reducible to practical operations and functions as an animal analogue to the practical intellect.<sup>88</sup> Indeed, Aquinas here goes so far as to deny to animals any awareness of individuality that is not linked to some practical, survival-oriented need. There is no “theoretical” function for estimation, and hence no

recognition of individuality as such in animals who possess it. Rather, animals recognize individuals only because individual particulars alone are the objects of appetite and relevant to the animal’s well-being: “Hence it in no way apprehends by its natural estimation those individuals to which its action or passion do not extend. For natural estimation is given to animals so that through it they will be ordered in their proper actions or passions to be pursued or avoided.”<sup>89</sup>

## 6. Conclusion

If there is one thing that emerges from the examination of these four authors, it is that it is impossible to isolate any universal features that are common to all medieval exponents of the philosophical doctrine of internal senses. Neither the number of distinct senses, their interrelations, their cognitive functions, nor even the nature of their objects, is understood in exactly the same way by any of our subjects. Nor, with a few exceptions, is it entirely clear that these differences were ever raised to the level of explicit conflicts or disagreements amongst the exponents of the tradition. Rather, these variations are determined by the intrinsic complexity of the philosophical issues that the internal senses were meant to address.

A fundamental source of this complexity must certainly be the indeterminacy of the notion of intentions as it is introduced into discussions of the internal senses by Avicenna. For it is Avicenna’s recognition of this special class of sensible objects that provides the chief philosophical motivation for proliferating the number of post-sensory faculties beyond those posited or at least suggested by Aristotle through the introduction of the estimative faculty into the cognitive framework previously defined by Aristotle’s *phantasia*.<sup>90</sup> Avicenna’s decision to keep the notion of intentions fluid and to define it entirely in negative terms with reference to what could *not* be explained by an appeal to the perceptual capacities of the external senses and the images preserved in their absence forced later philosophers to supply their own positive accounts of what intentions were, and then to assess on the basis of such guesswork whether in fact these intentions necessitated the radical changes to Aristotelian cognitive psychology that Avicenna had wrought. It was through such a process of interpretation and assessment that the doctrine of the internal senses brought medieval philosophers up

against the fundamental issues of the scope and extent of sense knowledge and their implications for both animal and human cognition.

On the one hand, Avicenna's own insistence on the presence of an estimative faculty in the human sensitive soul was overshadowed by his tendency to appeal to animal examples of estimation to illustrate the non-sensible character of intentions. These examples seemed to capture the imagination of Avicenna's later readers, most if not all of whom assumed that the same human capacities could easily be explained with reference to reason.<sup>91</sup> Nor can it be denied that much of Avicenna's own insistence upon the existence of a human estimative faculty was inspired by a radical dualism that prevented him from assigning to the intellect any cognitive abilities that presupposed true commerce and interaction with the sensitive soul, a dualism which was rejected by all the succeeding philosophers I have considered.

But there is also an irony in all this, for it is the dualist Avicenna who accords the most autonomy to the estimative faculty in humans and animals alike.<sup>92</sup> There is no indication that Avicenna intends animal estimative perceptions to be purely instinctual to the extent that animals are denied true awareness of the intentions present in their estimative faculties.<sup>93</sup> Avicenna clearly believes that estimation endows animals with cognitive abilities that are cognitive in the fullest sense of the word, that is, they are both conscious and open to augmentation through learning and experience. To this extent Avicenna's views are diametrically opposed to those of both Averroes and Aquinas, the former of whom appears to deny to animals any capacity for recognizing individual intentions, and the latter of whom reduces the grasp of intentions to the level of a purely instinctive reaction.<sup>94</sup> In this respect, moreover, although Albert remains closest to Avicenna, he seems to have taken the first step along this path through his reduction of estimation to a purely practical power, a reduction which finds its natural culmination in Aquinas' claim that animals can recognize individuals only insofar as they represent a principle or goal of action.

But are these developments by Avicenna's successors in the internal sense tradition positive ones, reflective of a move towards greater explanatory economy and away from the needless proliferation of faculties? Or do they represent an impoverishment of Avicenna's rich conception of the scope of sensible cognition? If one's

principal interest in the internal sense tradition is its attribution of a complex inner life to non-human animals, and whatever practical and ethical consequences might be drawn from this, Avicenna's views might seem to win hands down on such grounds.<sup>95</sup> But it is my contention that Avicenna's account of the place of estimation amongst the internal senses is of most significance for his general understanding of the scope of sense cognition in *human* knowers. Indeed, the primary philosophical interest of the doctrine of the internal senses lies in its ability to bridge the gap between knowledge of the particular and knowledge of the universal that is central to almost every aspect of Aristotelian epistemology. To the extent that the estimative faculty, with the manifold functions assigned to it by Avicenna, forms the cornerstone of the theory of the internal senses, any developments which diminish its importance represent a threat to the explanatory value of the entire tradition founded upon it.

## Notes

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<sup>1</sup> The "internal senses" (*al-ḥawāss al-bāṭinah/sensus interiores*) are a cluster of faculties which medieval philosophers located in the brain and to which they assigned the various functions which were associated with the imagination (*phantasia*) throughout Aristotle's *De anima* and *Parva naturalia*. The internal sense tradition is discussed most fully by Wolfson, whose work on the topic remains the most comprehensive and reliable. See H. A. Wolfson: "The Internal Senses in Latin, Arabic, and Hebrew Philosophical Texts"; "Isaac Israeli on the Internal Senses"; "Notes on Isaac Israeli's Internal Senses"; and "Maimonides on the Internal Senses," all reprinted in H. A. Wolfson, *Studies in the History and Philosophy of Religion*, ed. I. Twersky and G. H. Williams, 2 vols. (Cambridge, Mass.: Harvard University Press, 1979), 1: 250–370. Wolfson's pioneering work requires some updating, however, in the matter of Avicenna's place in the development of the tradition. Wolfson attributes to Avicenna's predecessor, al-Fārābī (d. 950), a full-fledged account of internal sensation in which brain localization and the proliferation of the internal faculties to include not only imagination, but also the formative, estimative, and cogitative senses, is already present. At the time when Wolfson wrote his studies, however, several works which are now generally held to be those of Avicenna or one of his followers – most notably the *'Uyūn al-masā'il (Principal Questions)* and *Fuṣūṣ al-ḥikam (Seals of Wisdom)* – were commonly attributed to Fārābī. In Fārābī's known authentic writings, in particular *Al-Madīnah al-fāḍilah (The Virtuous City)*, the presentation of sensation and imagination is standardly Aristotelian: only imagination is mentioned, and

the heart rather than the brain remains the central internal perceptual organ. See *Al-Fārābī on the Perfect State: Abū Naṣr al-Fārābī's Mabādī' Ārā' al-Madīna al-Fādīlah*, ed. Richard Walzer (Oxford: Clarendon, 1985), chap. 10, §1, 162–163, and §§3–4, 166–169; chap. 14, 210–227.

That Avicenna is the originator of the internal sense tradition in its full-blown medieval form, and of the estimative faculty in particular, is also indicated by Averroes. In his early *Epitome of the Parva naturalia*, Averroes refers to “estimation” (*wahm*) as Avicenna’s term for an animal ability that has no proper name of its own. In his later *Tahāfut al-tahāfut (Incoherence of the Incoherence)*, Averroes is openly dismissive of the estimative faculty, which he explicitly treats as an Avicennian innovation: “. . . [Avicenna] distinguished himself from the rest of the philosophers by assuming in the animal another faculty than the imaginative, which he calls the estimative faculty. . . .” See *Tahāfut al-tahāfut*, ed. M. Bouyges (Beirut: Imprimerie Catholique, 1930), 546–547; English translation by S. Van Den Bergh, *Averroes' "Tahāfut al-Tahāfut,"* 2 vols. (Cambridge: E. J. Gibb Memorial Trust, 1954), 1:336. For the *Epitome of the Parva naturalia* see *Talkhīṣ kitāb al-ḥiss wa-al-maḥsūs*, ed. H. A. Blumberg (Cambridge, Mass.: Mediaeval Academy of America, 1972), 39; medieval Latin translations in *Compendia librorum Aristotelis qui parva naturalia vocantur*, ed. A. L. Shields and H. A. Blumberg (Cambridge, Mass.: Mediaeval Academy of America, 1949), 52; there is also an English translation by H. A. Blumberg (Cambridge, Mass.: Mediaeval Academy of America, 1961), but I have provided my own translations throughout. References to the Arabic pagination are prefixed by the letter A; references to the Latin by the letter L.

<sup>2</sup> For a fuller discussion and evaluation of Avicenna’s concept of estimation in the light of its critics in the medieval Islamic world, see my “Estimation (*Wahm*) in Avicenna: The Logical and Psychological Dimensions,” *Dialogue* 32 (1993): 219–258.

<sup>3</sup> For other discussions of the views of Latin philosophers on the internal senses see Wolfson, “The Internal Senses” (n. 1 above); Nicholas Steneck, “The Problem of the Internal Senses in the Fourteenth Century” (Ph.D. diss., Univ. of Wisconsin, 1970); K. Tachau, “What Senses and Intellect Do: Argument and Judgment in Late Medieval Theories of Knowledge,” in *Argumentationstheorie: Scholastische Forschungen zu den logischen und semantischen Regeln korrekten Folgern*, ed. Klaus Jacobi, Studien und Text zur Geistesgeschichte des Mittelalters, Bd. 38 (Leiden: Brill, 1993), 653–668; and A. Mark Smith, “Picturing the Mind: The Representation of Thought in the Middle Ages and Renaissance,” *Philosophical Topics* 20.2 (Fall 1992): 149–170.

<sup>4</sup> The principal texts on the internal senses are: (1) *Al-Shifā': Al-Nafs (Healing: De anima)*, ed. F. Rahman, *Avicenna's "De anima," Being the Psychological Part of Kitāb al-Shifā'* (Oxford: Oxford University Press, 1959), 1.5 and 4.1–3, 43–45; 58–61; 163–169; medieval Latin translation edited by S. Van Riet, *Avicenna Latinus: Liber de anima, seu sextus de naturalibus*, 2 vols. (Louvain: Peeters; Leiden: Brill, 1968, 1972) (contains marginal references to the pagination of the Arabic text); (2) *Al-Najāh: Al-Nafs (Deliverance: De anima)*, ed. M. Fakhry (Beirut: Dar al-Afaq al-Jadīdah), 200–202; English translation by F. Rahman, *Avicenna's Psychology* (Oxford University Press, 1952), 30–31. This text repeats portions of the *Shifā'* account almost verbatim, but it lacks much of the material covered in *Shifā': De anima* Book 4. For this reason I omit refer-

ences to Arabic text of the *Najāh* account, although for the sake of convenience I have provided references to Rahman’s translation of any passages that occur in both texts; (3) Chaps. 5 and 6 of the early *Maqālah fī al-naḥs (Treatise on the Soul)*, ed. S. Landauer, “Die psychologie des Ibn Sīnā,” *Zeitschrift der deutschen morgenländischen Gesellschaft* 29 (1876): 339–372; (4) *Qanūn fī al-ṭibb (Canon of Medicine)*, ed. A. Zi’ur and I. Al-Qashsh (Beirut: Mu’assasah Izz al-Din, 1987), 96–97; (5) *Al-Ishārāt wa-al-tanbīhāt (Directives and Remarks)*, ed. J. Forget (Leiden: Brill, 1892), 123–125. Of these texts, only the *Healing* and *Canon* accounts were available to the West in Latin versions, although the Latin translation of Ghazālī’s *Maqāsid al-falāsifah (Intentions of the Philosophers)*, in which Ghazālī presents the basics of Avicenna’s philosophy, was also an important source for Western views of the internal senses, and it figures prominently in the accounts of Albertus Magnus. See *Maqāsid al-falāsifah*, ed. S. Dunya (Cairo: Dar al-Ma’arif bi-Misr, 1961), 356–358; for the medieval Latin version see the edition of J. T. Muckle, *Algazel's Metaphysics* (Toronto: Pontifical Institute of Mediaeval Studies, 1933), 169–171.

<sup>5</sup> *Shifā': De anima* 1.5, 43–44; *Avicenna's Psychology*, 30–31.

<sup>6</sup> *Shifā': De anima* 1.5, 43; *Avicenna's Psychology*, 30. According to this text, the compositive imagination seems able to perceive as well as to act upon images. But such an interpretation would leave Avicenna open to the charge that the compositive imagination is either contradictory – since it is both active and passive in the same respect simultaneously; or superfluous – for if it can be both active and passive, why can’t the formative imagination or the estimative faculty also be both active and passive, and thereby perform its combinatory functions? This was a point of contention amongst Avicenna’s 13th-century commentators, who argued over whether the compositive imagination itself actually perceived its contents while composing and dividing them. On this point see Black, “Estimation,” 251 n. 41. Cf. also Ghazālī, *Maqāsid*, 357: “the role of the imagination is to move, not to perceive” (*al-mutakhayyilah sha’nu-hā al-taharruk lā al-idrāk*; Latin: *movere non apprehendere*, 170).

<sup>7</sup> This principle is peculiar to powers of apprehension, which, like the internal senses, are physical powers operating through a bodily organ (i.e., the brain), and for this reason the principle does not apply on the level of the immaterial intellect. Hence it is understood as primarily physiological by Avicenna’s medieval Latin readers: for if we look at the world of physical change, we find that the same matter is never equally suited receiving and retaining what is received, as is the case with Avicenna’s example of water which, because of its fluidity, is a good receiver but a poor retainer.

<sup>8</sup> Avicenna in fact lists four principles but he does not seem to employ the fourth one, which is a distinction between primary and secondary, i.e., direct and mediated, perception. See *Shifā': De anima* 1.5, 43–44.

<sup>9</sup> The label “formative” (*al-muṣawwirah/formativa*) flags the fact that the imagination’s perceptual scope is limited to forms or images (*al-ṣuwar*) as opposed to intentions.

<sup>10</sup> In *Shifā': De anima* 4.2, 174 Avicenna states explicitly that it is part of the compositive imagination’s nature to be continually occupied by what is stored in the formative imagination and memory, even in sleep.

<sup>11</sup> *Shifā': De anima* 1.5, 45: “Then there is the faculty which is called imaginative (*mukhayyilah*) in relation to the animal soul (*bi-al-qiyās ilā al-naḥs al-ḥayawānīyah*), and cogitative (*mufakkirah*) in



relation to the human soul (*al-nafs al-insānīyah*) . . . ; and one of its functions is to combine the things which are in the [retentive] imagination (*al-khayāl*) with one another and to separate them from one another voluntarily (*bi-ḥasab al-irādah*)." Compare *Avicenna's Psychology*, 31.

<sup>12</sup> Although the translation of *al-ma'nā* by the Latin *intentio* is often treated as a mistake, I believe it that accurately conveys the technical philosophical connotations of the term in its generic sense, even though it is not a verbatim rendition of the Arabic. Avicenna himself says in the *De interpretatione* ('*Ibārah*) of his *Shifā'* (which was not translated into Latin), that "meanings" are "the intentions of the soul" (*maqāṣida li-l-nafs*) i.e., what a verbal expression is intended to signify: "What is emitted vocally signifies what is in the soul, and these are what are called impressions (*āthāran*), whereas what is in the soul signifies the things (*al-umūr*), and these are what are called meanings (*ma'āniya*), that is, the intentions of the soul." See *Al-Shifā': al-'Ibārah*, ed. M. El-Khodeiri and I. Madkour (Cairo: Dar el-Katib al-'Arabi, 1970), 2–3.

<sup>13</sup> For an overview of the later history of intentionality in the context of its ancient and medieval background, see Richard Sorabji, "From Aristotle to Brentano: The Development of the Concept of Intentionality," in *Aristotle and The Later Tradition*, ed. H. Blumenthal and H. Robinson, 227–259, Oxford Studies in Ancient Philosophy, supplementary volume (Oxford: Clarendon, 1991). It should be noted, however, that Sorabji seems unaware that the Arabic *ma'nān* as used by Avicenna admits of both generic and specific senses which are often combined in Avicenna's accounts of the estimative faculty, as is the case in the passage from *Shifā': De anima* 2.2 which Sorabji translates from the Latin version as Text 14 in his appendix (254). These two senses of *ma'nān* do not represent different "accounts" of the same concept, as Sorabji suggests by referring to the description of estimative intentions as the "better-known account" (237), but rather, they represent different applications of a single term to two distinct, though perhaps not totally equivocal, concepts. It should also be noted that the Latin version of Sorabji's Text 14 differs from the Arabic in one important respect (as Van Riet notes in her apparatus) which seriously affects Sorabji's interpretation of Avicenna. The Arabic has simply "intentions" (*al-ma'ānī*) where the Latin has *intentiones materiales* (60). That this is not merely a textual variant in the underlying Arabic of the Latin translations is clear from the fact that the *Shifā'* formula is repeated in the *Najāh* (209, *Avicenna's Psychology*, 40). Moreover, in all of Avicenna's remaining texts on estimative intentions, they are described either as *non-sensible* or even as intelligible, but never as material. For references see Black, "Estimation," 248 nn. 17, 19.

<sup>14</sup> Avicenna himself simply offers the following explanation: "It has been customary to call the thing apprehended by the sense a form, and the thing apprehended by the estimation an intention" (*Shifā': De anima*, 4.1, 167).

<sup>15</sup> *Shifā': De anima*, 2.2, 60. See note 13 above regarding the peculiarities of the Latin translation of this passage.

<sup>16</sup> *Shifā': De anima* 1.5, 43, 45; *Avicenna's Psychology*, 30–31.

<sup>17</sup> These examples are repeated in almost all of Avicenna's accounts of the internal senses: *Shifā': De anima* 1.5, 43, 45; 4.1, 166; 4.3, 183–185; *Avicenna's Psychology*, 30–31; *Qanūn* 96; *Maqālah fī al-nafs*, 359–360. For other texts see Black, "Estimation," 247 n. 9.

<sup>18</sup> *Shifā': De anima* 2.2, 61; *Avicenna's Psychology*, 39–40. Avicenna's argument here relies on the weaker epistemic version of

the claim that intentions are immaterial, namely, that the intellect can understand them without any reference at all to matter, whereas sensible properties must be conceived of as properties of a body. Avicenna does not explicitly make the stronger claim that he presumably also holds, namely, that these intentional properties actually exist in immaterial beings, such as human or divine intellects.

<sup>19</sup> *Shifā': De anima* 4.1, 167.

<sup>20</sup> See especially *Qanūn*, 96, where Avicenna calls estimation "the power which is in reality the internal percipient in the animal" (*qūwah hiya bi-al-ḥaqīqah al-mudrikah al-bāṭinah fī al-ḥayawān*); and *Shifā': De anima* 4.1, 168: "And it seems that the estimative power is itself cogitative, imaginative, and memorative, for it is itself the judge. For through itself it is a judge, whereas its activities and its motions are imaginative and memorative. For it is imaginative through what its effects in the forms and intentions, and memorative through what its activity terminates in. . . . And it is not impossible that the estimative faculty is a judge per se, but through its movement imaginative and memorative." For other texts on estimation as a judge, see also *Shifā': De anima* 4.3, 182; *Qanūn*, 97; *Maqālah fī al-nafs*, 359, 363; *Ishārāt*, 124.

<sup>21</sup> For a fuller account of how these incidental perceptions can be counted as intentions without violating the principle that intentions are a distinct class of properties from forms, see Black, "Estimation," 225–227.

<sup>22</sup> The link to animal self-awareness is not explicit in Avicenna's writings translated into Latin. It occurs only in Avicenna's late work, *Al-Mubāḥathāt* (*Investigations*), where the general theme of self-awareness is of special concern. See *Ariṣṭū 'inda al-'arab*, ed. A. R. Badawi, 118–239 (Cairo: Maktabah al-Nahdah al-Misriyah, 1947), §305, 184; §367, 204. The apperceptive functions of estimation are discussed in these passages, but they can also be gleaned from Avicenna's brief remarks in *Shifā': De anima* 2.2, 67: "As to perceiving that it perceives, this does not belong to the sense, for the perception here is not a color which is seen nor a sound which is heard, but rather, this is only perceived through the estimative faculty."

<sup>23</sup> *Shifā': De anima* 4.1, 166. Avicenna develops this notion of erroneous estimative judgments most fully in his logical writings, particularly in the *Burhān* (*Posterior Analytics*) sections of the *Shifā'* and the *Ishārāt*, neither of which was available to the Latin West. See *Al-Shifā': al-Burhān*, ed. A. E. Affifi and I. Madkour (Cairo: Organisme Général des Imprimeries Gouvernementales, 1956), 64; *Ishārāt*, 59–61; English translation by S. C. Inati, *Remarks and Admonitions, Part One: Logic* (Toronto, Pontifical Institute of Mediaeval Studies, 1984), 123–124. Much of what Avicenna says in these contexts can, however, be gleaned from the logic portion of Ghazālī's *Maqāṣid*, 104–105. For the medieval Latin translation of this part of the text (which is not in Muckle), see C. H. Lohr, "Logica Algazelis: Introduction and Critical Text," *Traditio* 21 (1974): 223–290, esp. 276 ("estimative"= *opinabiles*). For a fuller discussion of estimative premises, see Black, "Estimation," 229–232, 246 n. 4.

<sup>24</sup> *Shifā': De anima* 4.3, 182–183. The example is probably inspired by *De an.* 3.1, 425a30–b4, reflecting the links between estimation and the theory of incidental perception. It is a favorite metaphor in Avicenna's poetics: "Honey is vomited bile" is given as an example of a "poetic" premise. See my *Logic and Aristotle's 'Rhetoric' and 'Poetics' in Medieval Arabic Philosophy* (Leiden: Brill, 1990), 236–238.



<sup>25</sup> *Shifā'*: *De anima* 4.1, 166–167.

<sup>26</sup> *Ibid.* 4.3, 183. It is important to recognize that Avicenna is speaking here of the *estimative* faculty, not the cogitative faculty. The *cogitative* functions of compositive imagination are not discussed in much detail in Avicenna's accounts of the internal senses themselves. Their most important manifestations are in the rational processes of composition, division, and syllogizing, and Avicenna alludes to them more frequently in his discussions of the intellectual operations that they accompany, especially throughout *Shifā'*: *De anima* 5.5–6.

<sup>27</sup> The full scope of estimation's function in the physical sciences must be gleaned from the references to the power throughout his philosophical corpus. For other texts and discussion see Black, "Estimation," 234–236.

<sup>28</sup> The connection between estimation and artistic expression, as well as its role in the development of human emotions, is made in the discussion of the relations between the practical intellect and the animal soul in *Shifā'*: *De anima* 5.1, 204–206; cf. *Najāh* 202–203, *Avicenna's Psychology*, 32–33.

<sup>29</sup> In the course of explaining our emotional reactions to memories at *Shifā'*: *De anima* 4.3, 187, Avicenna explicitly declares that judgments involving the emotions are the province of the estimation: "The recollection of sadness, anger, grief, and other emotions may be accompanied by something which is similar to the state which befalls us from these emotions themselves. This is because the causes of sorrow, anger, and grief only exist in what is past through the impression of these [past] forms in the internal senses. So whenever the form returns it produces these emotions or something close to them. Desires and hopes too produce these emotions, although hope is different from desire, for hope imagines some matter along with a judgment or opinion that for the most part it will come about, whereas desire is the imagination of a thing and a longing for it, plus the judgment that some pleasure would come about if the thing were to exist. Fear is opposed to hope by way of contrariety, whereas desperation is the privation of hope. And all of these are judgments belonging to the estimation."

<sup>30</sup> For discussions of Averroes' views on the internal senses, see, in addition to Wolfson (n. 1 above), Helmut Gätje, "Die 'inneren Sinne' bei Averroes," *Zeitschrift der deutschen morgenländischen Gesellschaft* 115 (1965): 255–293; idem, "Gedächtnis und Erinnerung bei Avicenna und Averroes," *Acta orientalia* (Copenhagen) 49 (1988): 7–36; Michael Blaustein, *Averroes on the Imagination and the Intellect* (Ph.D. dissertation, Harvard University, 1984); Deborah L. Black, "Memory, Individuals, and the Past in Averroes's Psychology," *Medieval Philosophy and Theology* 5 (1996): 161–187.

<sup>31</sup> From an Avicennian perspective, then, it is not strictly speaking true to say that cogitation is Averroes' replacement for human estimation, since estimation and cogitation are already two different faculties in Avicenna. Moreover, as I have argued elsewhere, there is an important sense in which Averroist memory, rather than functioning as a retentive storehouse for cogitation, actually takes over one of the central perceptual functions performed by Avicennian estimation. See Black, "Memory in Averroes's Psychology," 162–175.

<sup>32</sup> For Averroes' rejection of estimation, see n. 1 above. For the Aristotelian background, see *De anima* 3.7, 431a8–14.

<sup>33</sup> Averroes' position on the nature of animal memory is ambiguous, and while he never explicitly says so, it appears that animals on his view have no distinct memorative faculty. The bulk of his account

in the *De memoria* chapter of the *Epitome of the Parva naturalia* entails the view that the activity of the memorative faculty presupposes the activity of the cogitative power, and thus it can only be ascribed to humans. But Averroes' does refer to *al-hayawān al-dhākir* 'animals having memory' at one point in his *De memoria* commentary (*Epitome of Parva naturalia*, A38/L52). But in this context Averroes is talking about the activity of remembering rather than about the memorative faculty, and he assigns the capacity for remembering in such animals to "nature" (*tabī'ah/natura*) rather than to any special faculty such as Avicenna's estimation.

<sup>34</sup> *Averrois Cordubensis Commentarium magnum in Aristotelis de anima libros* (*Great Commentary on Aristotle's De anima*), ed. F. S. Crawford (Cambridge, Mass.: The Medieval Academy of America, 1953), Bk. 2, comm. 63, 225.

<sup>35</sup> In the *Great Commentary* 2.65, 228–229, Averroes offers an argument for the claim that the senses alone cannot perceive individual intentions, one which is akin to the Porphyrian argument that the universal cannot belong to the individual inasmuch as it is an individual. Averroes argues that if the external senses were affected by the sensible properties of the individual as such, this would prevent them from sensing those same qualities when they are encountered in another individual. That is, if I were to see "white Socrates" in virtue of its being "white Socrates," then I could not see "white Plato" with the same sense faculty. Sensation would be coordinated to the perception of *Socrates'* whiteness and not with whiteness as such.

<sup>36</sup> *Great Commentary* 2.63, 225. Cf. 2.65, 228: "videtur enim quod comprehensio intentionum individualium substantiarum, de quibus intellectus considerat, est propria sensibus hominis."

<sup>37</sup> In this text the notion of the intention, as distinguished from the image, emerges as an interpretation of Aristotle's understanding of how an image can function as an *eikōn*, a portrait or copy of some specific individual to which it refers. See *De memoria* 1, 450b21–27; Black, "Memory in Averroes' Psychology," 168–169.

<sup>38</sup> In the *Epitome of the Parva naturalia*, 40, Averroes analyzes the memory-image in terms of traditional Aristotelian hylomorphism, so that the intention functions as the formal element and the image as the material element. It is important to note that Averroes is *not* claiming here that the intention represents the formal element in the extramental object and the image its matter, but rather, that as mental occurrence in its own right the memory-image can be analyzed in hylomorphic terms. On this point see Black, "Memory in Averroes' Psychology," 168.

<sup>39</sup> *Epitome of the Parva naturalia*, 41. *Al-mushār ilay-hi* is the Arabic translation of the Greek τὸδε τι (Latin *hoc aliquid*) 'this something'.

<sup>40</sup> *Epitome of the Parva naturalia*, 39–40. Initially Averroes adds a further stipulation, namely, that to remember something the intention must be viewed as present; but this drops out from the rest of his account, presumably because it is already presupposed in the notion of perception itself. For the fruit-rind metaphor, see *ibid.*, 33, 42–43.

<sup>41</sup> *Epitome of the Parva naturalia*, A41/L56: "Analysis and division are only concerned with the definition of the sensible thing inasmuch as (*mā dāma/dum*) it is sensible."

<sup>42</sup> Averroes employs the label *al-mumayyizah* 'discriminative' more often than *al-mufakkirah* 'cogitative' for the cogitative faculty when he is describing the act of sensible abstraction or analysis, since "dis-

crimination” better captures the function of this faculty in this process.

<sup>43</sup> Although in *Shifā'*: *De anima* 2.2, 60 (*Avicenna's Psychology*, 40), Avicenna does assign estimation a higher degree of abstractness or immateriality than the other external and internal senses in virtue of the higher degree of immateriality possessed by the intentions that are its proper objects, Avicenna does not imply that these intentions are known by estimation as the result of any abstractive operation that it performs on the image in order to extract the intention. To this extent Avicenna's views on estimation and abstraction in the sensible soul parallel his famous rejection of abstraction in the intellectual soul. For this see, for example, *Shifā'*: *De anima* 5.5, 235–236.

<sup>44</sup> Avicenna does include retentive or formative imagination on his scale of abstraction, of course, on the grounds that the ability to retain sensible forms in the absence of the external object shows greater independence from matter, i.e., from the material presence of physical things. See *Shifā'*: *De anima* 2.2, 59–60; *Avicenna's Psychology*, 39. This has led to the assumption that Averroes simply extended this reasoning to cover the memorative faculty's relation to the cognitive faculty, but such an explanation does not accord with what Averroes actually says in his account of the spirituality of memory. Moreover, as we have seen, Averroes holds that memory is involved in abstraction even while the sensible object is present. Presence and absence thus play no part in the Averroist definition of abstraction and spirituality. For more on this point see Black, “Memory in Averroes' Psychology,” 173–175.

<sup>45</sup> For the dating of Albert's works see James A. Weisheipl, “The Life and Works of Albert the Great,” in *Albertus Magnus and the Sciences: Commemorative Essays 1980*, ed. J. A. Weisheipl (Toronto: Pontifical Institute of Mediaeval Studies, 1980), 13–51; idem, “Appendix 1: Albert's Works on Natural Sciences (*libri naturales*) in Probable Chronological Order,” *Albertus Magnus and the Sciences*, 565–577; and Simon Tugwell, *Albert and Thomas: Selected Writings* (New York: Paulist Press, 1988), 3–129. Weisheipl dates the *Summa de creaturis* before 1246 (“Life and Works,” 22); Tugwell before 1244 (33); in either case both opt for a date at least a decade before the *De anima* and *Parva naturalia* commentaries, the former of which Weisheipl dates between June 1254–June 1257 and the latter of which he places after the *De anima* but before 1260 (“Appendix,” 568–569).

<sup>46</sup> See Albertus Magnus, *Secunda pars summae de creaturis: De homine*, vol. 35 of *Opera omnia*, ed. A. Borgnet (Paris: Vives, 1896); and *De anima*, ed. Clemens Stroick, vol. 7.1 of *Opera omnia*, ed. B. Geyer (Münster i. Westfalen: Aschendorff, 1968).

<sup>47</sup> See *De homine* 39.1 sc<sup>1</sup>3, 336a: “Praeterea, Quaeritur de quo intellectu hoc intelligatur quod dicit, quod aestimativa est brutis quod est intellectus hominis. Si enim intelligitur de intellectu speculativo, hoc est falsum. Virtus enim conferendo determinans verum vel falsum in imaginibus est in brutis loco intellectus speculativi: sed haec non est aestimativa, sed phantasia.” While Albert ultimately rejects the conclusion of this argument, namely, that the estimative power is motive, he does not reject its assumption that estimation is the analogue of the practical intellect.

<sup>48</sup> *De homine* 39.1 ad 1m, 337a: “Ad primum ergo dicendum, quod differt intentionem illam accipere per modum veri speculativi tantum, et accipere eandem per rationem appetibilis vel detestabilis. Et primo intentionem accipit phantasia, secundo modo aestimativa.”

<sup>49</sup> *Ibid.* 39.1 sc<sup>1</sup>2, 336ab: “Praeterea, Videtur aestimativa non esse virtus apprehensiva, sed motiva: virtus enim determinans inimicum vel amicum est virtus imperans fugam vel imitationem, et omnis talis est motiva. Cum ergo aestimativa talis virtus sit, ipsa videbitur motiva.”

<sup>50</sup> *Ibid.* 39.1 ad 2m, 337ab. Albert cites Averroes, Ghazālī, and Avicenna as authorities for this view.

<sup>51</sup> *De homine* 39.1 sol., 337a: “. . . aestimativa est virtus sequens phantasiam et diversa ab ipsa, et est determinans imitationem vel fugam in intentionibus apprehensis: quae, inquam, intentiones conjunctae sunt compositioni et divisioni phantasmatum, non tamen sunt acceptae a sensibus.”

<sup>52</sup> *Ibid.* 38.2 sol., 332b. Cf. 38.4 sol., 334a: “Dicit etiam phantasiam esse veram et falsam, quod convenit potentiae dividendi et componendi imagines apprehensas.” Albert also reiterates this view of the relations between phantasy and estimation in his concluding question on the internal senses taken as a group. See *De homine* 42.2 sol., 360b (reading *intentionem* for *nocumentum* at line 9 of the solution).

<sup>53</sup> Albert, *De anima* 3.1.2, 167b: “Oportet igitur dici, quod sicut intellectus practicus se habet ad speculativum, ita se habet aestimativa ad imaginationem; et ideo haec virtus non penitus apprehensiva, sed et motiva est per hoc quod determinat, ad quid movere debet animal et a quo fugere.”

<sup>54</sup> *Ibid.* 2.4.7, 157b: “Phantasia autem ab apparitione dicta est, quoniam illa est maior cognitio, quam habet anima sensibilis, et est ultimum virtutis eius. . . .” Albert makes this remark in the course of explaining why the specific name for compositive imagination, *phantasia*, is used by Aristotle to cover all of the internal senses.

<sup>55</sup> *Ibid.* 3.1.3, 168b: “Haec etiam opera non in omnibus videmus in quibus est imaginatio et aestimatio, sed in quibusdam quae perfectiora sunt. Oportet igitur phantasiam secundum aliquid esse differentem ab imaginatione et aestimativa.” Cf. 3.1.2, 167a: “Tres ergo istos interiores sensus, sensum communem scilicet et imaginationem et aestimativam, habet omne animal, quod aliquem vel aliquos habet de sensibus exterioribus.”

<sup>56</sup> *Ibid.* 3.1.2, 167b: “Est autem aestimativa magis activa quam imaginativa, quoniam elicere intentiones est aliquid agere et magis perfectum est quam speculari imagines solas, sicut si speculum animatum imagines sibi impressas speculari diceremus. . . . Licet autem plus actionis habeat aestimativa quam imaginativa, tamen proprietatem passivae potentiae habet in hoc quod non agit per se, sed per intentionem, quam elicit a forma acquisita.”

<sup>57</sup> *Ibid.* 3.1.3, 168ab. Albert, of course, recognizes that all of these internal sense powers are passive inasmuch as they are affected by the forms that they perceive: “Licet enim omnes istae potentiae passivae animae sint et patiantur a formis individuis, quas sunt principia cognitionis sensibilis, quae formae eadem esse videntur, tamen modus passionis non est idem, sed est secundum differentem gradum abstractionis” (168b).

<sup>58</sup> See the texts cited in n. 20 above.

<sup>59</sup> Albert, *De anima* 3.1.3, 168b: “videtur tota formalitas sensibilis virtutis esse in phantasia . . . ; et hoc modo videntur omnes istae vires animae sensibilis interiores esse in una essentialitate communi et substantia, differentes autem secundum esse materiale in diversis partibus cerebri, in quo organizantur istae potentiae, quae omnes sunt organicae.”

<sup>60</sup> *Ibid.* 2.3.4, 102a: “Et tale est, quod accipimus hunc esse filium Deonis et esse agnum vel hominem, aliud autem esse lupum vel

leonem, secundum quod substantiales formae mediantibus sensibilibus et non separatae ab ipsis apprehenduntur. Et iste gradus propinquus est cognitioni et numquam est sine aestimatione et collatione.”

<sup>61</sup> Ibid. 3.1.2, 167ab: “nec umquam lupus miseretur nato suo, nisi habeat cognitionem et huius individui et quod hoc individuum est natus eius.”

<sup>62</sup> Ibid. 2.3.4, 102a: “forma enim proprie est, quae informando dat esse actu materiae et composito ex materia et forma. Intentio autem vocatur id per quod significatur res individualiter et universaliter secundum diversos gradus abstractionis; et haec non dat esse alicui nec sensui, quando est in ipso, nec etiam intellectui, quando est in illo, sed signum facit de re et notitiam.” Sorabji, “From Aristotle to Brentano,” discusses this passage (241), but his claim that this interpretation of an intention is “not far from the original sense of *ma'nā* as meaning or message in Avicenna,” is untenable in the light of the difficulties in Sorabji’s interpretation of Avicenna as noted above (n. 13 above).

<sup>63</sup> Albert, *De anima* 2.3.4, 102ab: “Et ideo intentio non est pars rei sicut forma, sed potius est species totius notitiae rei; et ideo intentio, quia abstrahitur de toto et est significatio totius, de re praedicatur; intentio enim colorati, quae est in oculo, totam rem notificat, sicut et intentio, quae est in imaginatione particularis. . . .”

<sup>64</sup> I have used the following editions of Aquinas’ works:

*Summa theologiae*: 2d revised Ottawa edition, Institut d’Études Médiévales (Ottawa: Commissio Piana, 1953).

*Quaestiones disputatae de anima*: Since the new Leonine edition of this text has not been available to me, I have used the edition of James Robb (Toronto: Pontifical Institute of Mediaeval Studies, 1968).

*Sententia libri de anima*: References are given to both the Leonine edition of R.-A. Gauthier, vol. 14.1 of *Opera Omnia* (Rome: Leonine Commission; Paris: Vrin, 1984), and to the Marietti edition of A. M. Pirotta, *In Aristotelis librum De anima commentarium* (Turin: Marietti, 1959).

<sup>65</sup> Question 13 of the *QD de anima* is not devoted to the internal senses, but rather it includes a discussion of them in the course of exploring the general question of whether the soul’s powers are distinguished by their objects. For this reason very few of the objections in this text address issues pertaining to the internal senses in particular, and the body of the reply also contains a detailed discussion of the external senses and some brief remarks on the intellectual powers as well.

<sup>66</sup> Recent scholarship has revised the traditional view of the relative dates of the *QD de anima* and the *ST*. Glorieux assumed that the disputed questions were slightly later than the *prima pars* of the *ST*, and dated the text to 1269; he was followed by Robb in his edition of the text. The current consensus is that the disputed questions were written in 1265–1266, slightly earlier than the *prima pars* of the *ST*. For the dating see J.-P. Torrell, *St. Thomas Aquinas Volume 1: The Person and His Work*, trans. Robert Royal (Washington, D.C.: The Catholic University of America Press, 1996), 161–162. The chronology does not affect any of the issues that are central to this article since both texts present more or less the same view of the number and nature of the internal senses, although there are some slight differences in the accounts of memory offered in the two texts.

<sup>67</sup> Avicenna’s fivefold division of the internal senses is cited as

the *sed contra* in *ST* 1.78.4. Significantly, the cogitative power is not mentioned at all in this enumeration.

<sup>68</sup> In the account of *ST* 1.78.4, other principles of faculty differentiation as found in a variety of sources and authorities are presented in the objections and replies but not in the body of Aquinas’s own response.

<sup>69</sup> *ST* 1.78.4: “Dicendum quod cum natura non deficiat in necessariis, oportet esse tot actiones animae sensitivae, quot sufficient ad vitam animalis perfecti”; *QD de anima* 13: “Ad perfectam autem sensus cognitionem, quae sufficiat animali, quinque requiruntur.” The reference to “five things” here does not indicate a fivefold division of the internal senses, but rather, a fourfold one, since the first of the five necessary things enumerated are the external senses taken as a whole.

<sup>70</sup> This is the topic of George Klubertanz, *The Discursive Power: Sources and Doctrine of the “Vis Cogitativa” According to St. Thomas Aquinas* (St. Louis: Modern Schoolman, 1952).

<sup>71</sup> The qualification is necessary to take into account the ambiguities in Averroes’ views on animal memory. See n. 33 above.

<sup>72</sup> Aquinas also takes for granted in *ST* 1.78.4 Avicenna’s observation that intentions such as hostility, utility, friendliness, and harmfulness are not perceived by the external senses, since none of them counts as a proper or common sensible capable of physically or cognitively immuting, i.e., affecting, the sense organs: “Necessarium est ergo animali quod percipiat huiusmodi intentiones, quas non percipit sensus exterior. Et huius perceptionis oportet esse aliquod aliud principium; cum perceptio formarum sensibilium sit ex immutatione sensibili, non autem perceptio intentionum praedictarum.”

<sup>73</sup> It is, however, in keeping with Aquinas’s famous definition of the beautiful as “what pleases when seen” (*quae visa placent*). See *ST* 1.5.4 ad 1m; cf. *ST* 1–12.27.1 ad 3m (*pulchrum autem dicatur id cuius ipsa apprehensio placet*).

<sup>74</sup> *ST* 1.78.4; trans. A. C. Pegis, *Thomas Aquinas: Basic Writings*, 2 vols. (New York, 1945), 1:742. Unless otherwise indicated all translations of the *ST* are from Pegis.

<sup>75</sup> This is an interesting and largely persuasive argument, although it is difficult to verify Aquinas’ claim. If one took a different example, for instance, the bee’s or butterfly’s attraction to a flower for the purpose of pollination or gathering honey, one might easily adopt the view that the perception of utility coincides with the aesthetic judgment, i.e., the bee and butterfly are clearly attracted by the pleasing color or scent of the flowers, and natural teleology simply ensures that this attraction also has survival benefits for the species (as well as for the plant). It could then be argued that by the same token the sheep does not actually perceive the hostility of the wolf but rather that nature has made the wolf’s appearance repugnant to the sheep in order to facilitate its survival.

<sup>76</sup> Aquinas cites Averroes’ *Epitome of the Parva naturalia* as his authority on this point in *ST* 1.78.4. In *QD de anima* 13, Aquinas makes no mention at all of the compositive imagination and uses the terms *phantasia* and *imaginatio* as interchangeable labels for the retentive imagination.

<sup>77</sup> The former description is found in *ST* 1.78.4, the latter in *QD de anima* 13.

<sup>78</sup> In the *QD de anima* Aquinas also mentions the identification of the cogitative faculty as the *intellectus passivus*, a point which he omits in the *ST*, perhaps because of its association with the Averroist arguments for the unicity of the intellect. But as Professor Richard

Taylor of Marquette University has reminded me, it is probably from Averroes himself that Aquinas derives the claim that the cogitative power can be viewed as a kind of reason. In the *Great Commentary on De anima*, 3.20, 449, Averroes glosses Aristotle's reference at *De anima* 3.5, 430a24–125 to παθητικὸς νοῦς as follows: “Et intendebat hic per intellectum passibilem formas ymaginationis secundum quod in eas agit virtus cogitativa propria homini. Ista enim virtus est aliqua ratio. . . .”

<sup>79</sup> *Sententia libri de anima* Bk. 2, chap. 13, part <II>, 120b–122b (Marietti ed., Bk. 2, lect. 13, nn. 395–397).

<sup>80</sup> The view Aquinas is countering takes the first condition to be sufficient for incidental perception.

<sup>81</sup> *Sent. de anima* 2.13, 122b (n. 394): “Oportet igitur quod per se cognoscatur ab aliqua alia potencia cognoscitiua sentientis.”

<sup>82</sup> *Ibid.* 2.13, 121b (n. 396): “Si uero apprehendatur in singulari, ut puta <si> cum uideo coloratum, percipio hunc hominem uel hoc animal, huiusmodi quidem apprehensio in homine fit per uim cogitativam. . . .” In keeping with his account of cogitation in the *ST* and *QD de anima*, the cogitative faculty is again identified as a type of particular reason, in virtue of its status as the faculty that not only perceives, but also compares, individual intentions: “quae dicitur etiam ratio particularis, eo quod est collativa intentionum individualium, sicut ratio universalis est collativa rationum universalium.” Note that here Aquinas reserves the label *intentiones* for the objects of the cogitative faculty, preferring to call the objects of the intellect *rationes*.

<sup>83</sup> Aquinas' initial approach to this problem is not to argue that observation requires the recognition of such forms of incidental perception in animals other than humans, but instead to assert the metaphysical principle of participation as requiring that the summit of the sensitive soul be conjoined in some way to the lower limit of the intellectual soul: “quia uis sensitiva in sui supremo participat aliquid de ui intellectiva in homine, in quo sensus intellectui coniungitur” (*Sent. de anima* 2.13, 122a [n. 397]). Cf. *ST* 1.78.4 ad 5m.

<sup>84</sup> See above at nn. 60–63.

<sup>85</sup> *Sent. de anima* 2.13, 122a (n. 397): “in animali uero irrationali fit apprehensio intentionis indiuidualis per estimatiuam naturalem, secundum quod ouis per auditum uel uisum cognoscit filium uel aliquid huiusmodi.”

<sup>86</sup> *Ibid.* 2.13, 122a (n. 398): “nam cogitativa apprehendit indiuiduum ut existentem sub natura communi, quod contingit ei in quantum uniter intellectiue in eodem subiecto, unde cognoscit hunc hominem prout est hic homo et hoc lignum prout est hoc lignum. . . .”

<sup>87</sup> *Ibid.* 2.13, 122b (n. 398): “estimativa autem non apprehendit aliquod indiuiduum secundum quod est sub natura communi, set solum secundum quod est terminus aut principium alicuius actionis uel passionis, sicut ouis cognoscit hunc agnum non in quantum est hic agnus, set in quantum est ab ea lactabilis, et hanc herbam in quantum est eius cibus. . . .”

<sup>88</sup> Klubertanz has argued in *The Discursive Power*, 262–264, that for Aquinas the cogitative power of humans is involved primarily if not exclusively in the operations of the practical intellect, as is evidenced by the central role it plays throughout the Thomistic corpus in explaining how we know the minor premise of a practical syllogism.

<sup>89</sup> *Sent. de anima* 2.13, 122b (n. 398): “unde illa indiuidua ad que se non extendit eius actio uel passio, nullo modo apprehendit sua estimatiua naturali: naturalis enim estimatiua datur animalibus ut per eam

ordinentur in actiones proprias uel passiones prosequendas uel fugiendas.”

<sup>90</sup> I refer to this as the chief philosophical motivation for the internal senses since there is, of course, a prior medical and physiological motivation in the acceptance of Galen's view that the brain rather than the heart is the primary locus of sensory processes.

<sup>91</sup> Of the authors whom I have examined, Albert seems to be the exception to the extent that he does recognize some human manifestations of estimation in his *De anima* commentary, although they are not especially prominent in his overall account. Moreover, unlike Avicenna, no explanation at all is given of the relations between the estimative faculty and the intellect in these cases.

<sup>92</sup> The irony is especially evident if one compares Avicenna to another dualist to whom he often shows a marked affinity, namely, Descartes. The Avicennian view of the function of estimation in animals is a far cry from the standard Cartesian picture of animals as mere automata, well-known from Part 5 of the *Discourse on Method*. See vol. 6 of *Oeuvres de Descartes*, ed. C. Adam and P. Tannery (Paris: Cerf, 1902), 55–60. One reason for this difference between Descartes and his medieval predecessor may be the comparative breadth of a Cartesian mind relative to an Avicennian intellect. Descartes counts many things as ideas – sensations, imaginations, volitions, even pleasure and pain – that for medieval authors are pre-intellectual and thus not exclusive to humans.

<sup>93</sup> Klubertanz's claim that Avicennian intentions are innate or infused (*Discursive Power*, 104) in animals represents a distortion of *Shifā'*: *De anima* 4.3, 183–184. There Avicenna alludes to the emanations of “divine mercy” and “divine inspiration” in the course of explaining the difference between an animal's perception of intentions that it has not previously encountered, and its ability to acquire new intentions from repeated experience. Avicenna's point is simply to establish that the ability to perceive intentions is natural to animals, not that the intentions themselves are infused or implanted directly in them. Indeed, Avicenna is especially careful to assert that such instinctive reactions to intentions, both human and animal, are only “as if innate” (*ka-anna-hu gharīzah*).

<sup>94</sup> An interesting contemporary view on the nature of animal “belief” which falls somewhere in between the views of Avicenna and those of his successors is found in Bernard Williams' essay, “Deciding to Believe,” *Problems of the Self: Philosophical Papers 1966–1972*, 136–151 (Cambridge University Press, 1973), esp. 138–139, 143–144.

<sup>95</sup> Most contemporary interest in the concept of an estimative faculty – like the interest of the medieval Latin tradition itself – focuses on its function in filling in the gap between animal sensation and human intelligence. See for example Tachau, “What Senses and Intellect Do” (n. 3 above); Charles H. Kahn, “Aristotle on Thinking,” in *Essays on Aristotle's De anima*, ed. M. Nussbaum and A. Rorty, 359–379 (Oxford: Clarendon, 1992), 366 n. 14; and especially Richard Sorabji, *Animal Minds and Human Morals: The Origins of the Western Debate* (Ithaca, N.Y.: Cornell University Press, 1993), 64, 87. I do not mean to claim that Avicenna himself had any animal rights agenda in his views on estimation (it seems to me quite obvious that he did not), but that his views would probably be more easily amenable to a project such as Sorabji's than would those of other medieval authors.

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