

On Quine

New Essays

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Transparency and Specificity in Intentional Contexts

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I. Transparency

Undue Restrictions

Since Quine's seminal writings on this topic, the de re, or transparent, reading of epistemic contexts as, for instance,

s believes that . . .

has often been associated with the actual existence of an individual that the intentional act or state at issue is about, i.e. the object or "thing" (res) of this act or state. For example, Kaplan and Hintikka – from different points of view – emphasized that a necessary condition for the truth of the de re reading is that there is an individual that the mental attitude is about. They pointed out some requirements this attitude must satisfy to be properly considered as involving an individual, and to justify the "exportation" of the relevant singular term in the underlying logical form; or, from a deductive point of view, to justify for instance the inference of:

(E) $\exists x(s \text{ believes that } x \text{ is } P)$

from the sentence schema:

(T) s believes that t is P

The point is that (T) was correctly seen as a potential source of ambiguity. In fact, both the de re interpretation and the de dicto one are possible (unless some contextual features impose either alternative). The next step, therefore, was to pick out some particular requirements that must be met for selecting the de re reading as the relevant (and, possibly, true) one.

These requirements concern only the cognitive apparatus of the subject of the intentional act or state,¹ but ignore the other hero of the story: the observer who reports the mental event.

In other words we have here two limitations: (a) only the epistemic perspective of the subject was thought to play a significant role in the requirements

de re reports ought to satisfy; (b) only singular terms (inasmuch as they denote individuals) were taken into account as candidates for “exportation”, i.e., as terms referring to objects of de re reports. These limitations undermined, I think, the interpretation of the general phenomenon of intentional contexts. Let us start from (a).

1. The Forgotten Hero: The Reporter

The idea I intend to question is that the opposition between de re and de dicto reports rests on an opposition between two different types of intentional acts or states, and that what distinguishes a de re report is the existence of some strong cognitive relationship between the agent *s* and the intended object *t*. It is not easy to say what such a relationship should consist of according to the advocates of that idea. On the other hand, my aim here is not to go into details and discuss the significance of these, or related, requirements from an epistemological point of view. What I hope to show is their inadequacy for a semantic characterization of de re reports. To do that, I will consider the approach I have just mentioned, according to which: (I) Such requirements, by specifying a particular kind of intentional act or state, are relevant to distinguishing the de re reading of a report from the de dicto one; (II) in any event, they represent a necessary condition of its truth. For example, in Kaplan’s theory,² this condition is that *s* be provided with a name which: (i) denotes the intended individual; (ii) is causally linked with this individual; (iii) involves a “vivid” representation of it in *s*’s cognitive universe.

Two short stories will illustrate both sides of the question. But, before telling them, I wish to make a preliminary remark. On the one hand, (II) expresses a precise idea which, according to a widespread theoretical attitude, must be included in the truth-conditions of de re reports. In this case, the paradigm is well defined, and Kaplan’s classical paper can be resorted to as a useful point of reference. This is why the criticism of this paradigm can be expressed in a more precise way, by questioning, as I said, the assumption that the epistemic requirements at issue are a necessary condition in a truth definition. On the other hand, (I) is to be interpreted in fuzzier terms. The underlying idea is that, given the ambiguity of such a report as (T), two different types of acts correspond to its possible interpretations. Hintikka’s analysis is particularly clear on this point, so I will refer to it as the explicit formulation of a tacitly shared assumption. In fact, in discussing an example of form (T),³ Hintikka stresses that the difference between those two interpretations is that on the de re reading the subject *s* has in mind a particular person (he knows who the intended individual is), although this may not hold on the de dicto reading. The temptation to establish a close correspondence between (linguistic) reports and (mental)

acts is so strong that, forcing the traditional terminology, he extends the *de re* (*de dicto*) appellation to the acts themselves.⁴

But it is time to consider the first story.

Points of View

Swann meets Vinteuil very often in Combray, so he knows many things about this shy musician. In particular he knows that Vinteuil is a piano teacher. But, needless to say, Swann is not omniscient. He is unaware that his friend composed the sonata he has just listened to at Verdurin's. He thinks the composer of this masterpiece is another piano teacher he is familiar with, Faurefranck. Consider now this sentence uttered by Theo, an observer who knows all the relevant details:

1 Swann believes that the composer of the sonata is a piano teacher

{a. What a coincidence! The man Swann has in mind really is a piano teacher, though actually he is not the composer of the sonata.}

{b. He is right, for Vinteuil is really a piano teacher. Indeed, Swann should be told that Vinteuil is the composer of the sonata.}

In this example, both readings are appropriate, as witnessed by the fact that if (1) is followed by {a}, the *de dicto* reading is natural (and true), whereas in the case of {b} the proper (and true) interpretation is the *de re* one. Therefore, our two readings fit the same kind of epistemic situation, for in both cases Swann's intentional act meets all the requirements suggested, for example by Hintikka, to characterize a *de re* statement (vividness, direct acquaintance, etc.). In other words, both readings refer to a situation in which Swann has a nongeneric belief involving a particular person he is familiar with: that is, Faurefranck and Vinteuil. So, if these readings do not correspond to different types of intentional acts or states, what distinguishes them? The natural answer is that in the *de dicto* case, illustrated by {a}, the description 'the composer of the sonata' is presented as part of Swann's belief, for what *the reporter* is interested in is an "internal" reconstruction of this belief. In the case of {b}, on the other hand, the descriptive content does not belong to Swann's conceptual apparatus, but it is used from the outside by the reporter to denote the intended person. To sum up, our example shows that what makes either reading appropriate (and true) is not any intrinsic feature of the agent's epistemic state, but the point of view from which his belief is seen. In fact, the descriptive content of a noun phrase can be used to characterize, from the inside, the agent's cognitive state. Alternatively, it can be resorted to, from the outside, in order to denote its real denotatum.

An important qualification is in order here. To speak of the reporter's point of view in order to characterize the *de re* reading, as I am doing here, does not

involve a subjectivist approach. In particular, it does not entail that the reference of the noun phrase at issue (on the *de re* reading) must be relativized to the reporter's system of beliefs. When Theo utters such a sentence as (1), the denotation of the phrase 'the composer of the sonata', on the *de re* interpretation, is its real denotation, that is Vinteuil; otherwise Theo would utter a more appropriate sentence, like, for example, 'Swann believes that the person who in my opinion is the composer of the sonata is a piano teacher'. In this respect, (1), on the *de re* reading, is not different from the plain sentence 'The composer of the sonata is a piano teacher': the description they contain must have the same denotation in both circumstances. It would be absurd to claim that, in the case of (1), there are as many readings as virtual reporters. Nevertheless, it is useful to refer to the point of view adopted by the reporter, who "exports" the descriptive content from within the intentional context, in order to emphasize the interaction between alternative conceptual perspectives that the reporter elicits. It is this interaction which explains why, whereas such a sentence as 'The composer of the sonata is not the composer of the sonata' is (in normal circumstances) mere nonsense, 'Swann believes that the composer of the sonata is not the composer of the sonata' is quite in order on the *de re* reading.

Thus, the opposition between *de re* and *de dicto* cannot be traced back to a distinction between different types of intentional acts, and the restrictions (in terms of vividness, causal relations, etc.) which are supposed to account for this distinction are not relevant here. Let us now ask ourselves whether such restrictions concerning the believer's epistemic attitude are a necessary condition for the truth of the report on the *de re* reading.

Here is a second story about Swann.

Who Knows Whom?

Thanks to some clues, Swann has come to the conclusion that his wife Odette has a lover, but he has no idea who his rival is, although some positive proof has convinced him that this person is going to leave Paris with Odette. So he decides to kill his wife's lover, and he confides his plans to his best friend, Theo. In particular, he tells Theo that the killing will take place the following day, since he knows that Odette has a rendezvous with her lover.

This time, the lack of complete information (but who can boast of omniscience?) gets Swann into trouble. For, unknown to him, Odette's lover is Forcheville, the chief of the army, and Theo is a member of the security staff which must protect Forcheville. During a meeting of this staff to draw up a list of all the persons to keep under surveillance, Theo (who, unlike Swann, knows all the relevant details of the story) says:

- 2 Swann wants to kill the chief of the army

meaning by this that Swann is to be included in the list. The head of the security staff, who is a reasonable person, accepts Theo's advice. In other words, he accepts 2 as true. Swann is kept under surveillance. A murder is avoided.

But according to the view we are discussing, the story should have a different conclusion. The head of the security staff should reason in the following way: After all what we are interested in is Forcheville's life; but Swann has no "vivid" representation of him,⁵ he just has some ideas about Odette's lover, so Theo's report (i.e., 2) cannot be true as an assertion about Forcheville (i.e., on the *de re* reading, in our quasi-technical jargon) and the intention to kill this person cannot be attributed to Swann. Conclusion: Swann is not included in the list of suspects. Forcheville is killed.

I am sure most people will find the first conclusion the more reasonable. But note: the only reason the head of the security staff has for accepting 2 as true (and, as a consequence, for including Swann on the list) is that he gives 2 the *de re* interpretation; that is, he is aware that the description 'the chief of the army' denotes Forcheville not from Swann's point of view but from the reporter's. As a matter of fact 2 is false as a *de dicto* report (Swann does not want to kill the chief of the army, but Odette's lover). Yet, according to the traditional view, for 2 to be true on the *de re* reading Swann must have a strong cognitive characterization of the individual 2 is about. And, since this requirement is not satisfied in this case, 2 is false (on the *de re* interpretation) and the second, implausible, ending should conclude the story.

The moral to be drawn from this story is the following: (i) We must be able to account for the truth of such a report as 2 (on the *de re* interpretation); (ii) this means that the usual requirements concerning the agent's intentional state with respect to the intended individual (vividness, causal connections, etc.) cannot be seen as a necessary condition for the truth of 2; (iii) the reasons why 2 is to be accepted as a true *de re* report must be looked for elsewhere.

To answer the question raised in (iii) let us reflect on the "reasonable" ending to the story. The head of the security staff correctly assumes that Theo's report (i.e., 2) concerns Forcheville himself. This is why he takes adequate measures to safeguard his life. But all that has nothing to do with the "intensity" of Swann's epistemic characterization of the individual at issue. It would, however, be very hard to give this alleged requirement a suitable specification. What are the exact boundaries which would discriminate between a "good" epistemic access and an insufficient one, and which would license a *de re* interpretation? Consider, for example, these possibilities: Swann is in possession of an (unsigned) letter Forcheville sent to Odette; he sees for an instant the shadow of his rival on the stairs; he heard his voice on the phone during a conversation with Odette; he watches the TV news where the chief of the army (i.e., unknown to Swann, Odette's lover) is interviewed; and so on. Which of

these events would make Swann's epistemic relationship with Forcheville strong enough to consider 2 as a true de re report? How many of them? It is difficult⁶ to say. But, what is more important, such requirements seem not to be relevant to justify the de re interpretation that the head of the security staff gives to the report. What induces him to accept 2 as a statement which concerns Forcheville (and his life) is the fact that, seen from outside i.e., from the point of view of the reporter – Swann's intentional attitude is directed toward Forcheville. (The reporter knows, for instance, that if Forcheville goes to the rendezvous, he will be killed.) And this is precisely how matters stand, although Swann's information about his rival is very poor. The point is that what must be taken into consideration is a different kind of parameter: the reporter's epistemic perspective,⁷ which can identify the relevant object from outside.

This concludes my remarks on point (a) above. The need to point out some special epistemic relation between the agent and the intended individual as a necessary condition for the truth of a de re statement (which is exactly the idea discussed so far) makes sense only if it assumed that just an individual can be the proper object of such a statement.

It is time to turn to (b), which expresses this kind of assumption. Were it to prove groundless, the requirements concerning the epistemic access to the intended individual would turn out to be not only elusive, but also unnecessary, for a de re statement could no longer be characterized, in general, as being "about" an individual.⁸

2. Exportation Liberalized

My first observation has to do with questions of logical form. Using abstraction, a standard way to represent the two readings of a sentence of paradigm (T) is the following:

3 s believes (P(t))

4 $\lambda x[s \text{ believes } (P(x))]$ (t)

But note that this strategy is in principle a very powerful one, since abstraction can apply to other kinds of entities besides individuals. And this possible extension seems to capture important aspects of the de re/de dicto distinction in natural language. Yet, the interest in structures like 4 as ways of reconstructing the logical form of de re statements has usually been restricted to the cases in which t is a singular term, i.e., an expression denoting an individual. The only reason I see for this restriction is the prejudice that only an individual, a "thing" (res) is considered as the proper object of a de re (or transparent) statement. But the ambiguity between the de re and the de dicto readings is a much more general phenomenon. As we

have just seen, it has to do with the alternative between the “internal” or “external” point of view which can be adopted to describe an intentional act or state.

To see that this phenomenon does not concern only the cases in which the “object” of a belief (a desire, a thought, etc.) is an individual, consider the following example.⁹ In spite of its simplicity, it entails some implications that, as far as I know, are not discussed in the current literature.

The local soccer team includes fifteen players. One evening, after a match, they go to a restaurant and sit down at a table near Swann and his friend Theo. They are the only customers that evening. So, when Swann goes out of the restaurant and notices a dog waiting outside, he thinks that the pet belongs to someone in the group he has just seen and expresses this conviction to his friend. (Actually, the dog belongs to Ernie, the cook.) Now, Theo, who (unlike Swann) knows that the other customers at the restaurant are the soccer players, reports the situation in the following terms:

5 Swann believes that a soccer player [of the local team] has a dog.

The problem is how to account for 5 in formal terms. Note, first, that both logical forms traditionally associated with such statements as 5 are not appropriate in this case. In fact, on the one hand,

5a $\exists x(\text{Soccer_Player}(x) \wedge s \text{ believes } (\text{Has_a_dog}(x)))$

is clearly false, for there is no soccer player that can be pointed out as the individual Swann’s belief concerns.¹⁰ On the other hand,

5b $s \text{ believes } (\exists x(\text{Soccer_Player}(x) \wedge \text{Has_a_dog}(x)))$

is false, too (for Swann does not know that the persons he has just seen are the players of the local soccer team).

Intuitively, this point can be summed up by saying that the relevant (and true) reading of 5 in this situation is the transparent one, and that, on this reading, what is involved is not an individual, but a set of individuals, which is described from the reporter’s point of view. According to this interpretation, in the given situation 5 is equivalent to the statement:

5’ Of the soccer players Swann believes that one of them has a dog.¹¹

In formal terms, this can be expressed as follows:

5c $\lambda P[s \text{ believes } (\exists x(P(x) \wedge \text{Has_a_dog}(x)))](\lambda x[\text{Soccer_Player}(x)])$

which correctly means that the set of the given soccer players is such that Swann believes that one of them has a dog: where P is a predicate variable,¹² and the “exported” expression is not an individual term. Of course, instead of 5c one can adopt a logical form in which the exported expression is a singular

term. This is possible, for example, if, in our semantics, sets or properties are treated as individuals. But even in this case what makes our example interesting remains unchanged. The important thing is that, when we look at the original sentence of English, that is 5, what is exported is not the complete noun phrase ‘a soccer player’ (for in this case 5a would be quite in order, contrary to our intuition), but the common noun ‘soccer player’. This is the peculiarity which distinguishes the situation I am analyzing from the canonical examples discussed in the literature, no matter how the role of common nouns is reconstructed in the logical formalism, or how sets and properties are conceived of in the corresponding ontology.

Notice, incidentally, that a surprising result of this analysis is that there are many kinds of expressions with respect to which the intentional context is made transparent, and, as a consequence, there are many different structures which formalize these different cases of transparency. In order to appreciate the fruitfulness of this liberalization (and its intuitive justifications) let us consider another example. Suppose, this time, that Tim and Tom, who are two famous ethologists, own, respectively, seven dingoes and five cross foxes. Swann is informed about this situation, so that he correctly believes that there are more dingoes than cross foxes (or, more exactly, that the set of Tim’s dingoes is greater than the set of Tom’s cross foxes). This situation can be rendered by something like:

$$6 \quad s \text{ believes } (\lambda x[\text{Tim's_Dingo}(x)] > \lambda x[\text{Tom's_Cross_Fox}(x)])$$

But imagine that Swann is not able to identify either species of animal (since, for example, he mistakes dingoes for dogs and cross foxes for jackals), whereas the reporter is. In this case 6 is no longer true; a more appropriate structure is the following:

$$6' \quad \lambda P \lambda Q [s \text{ believes } (\lambda x[P(x)] > \lambda x[Q(x)])] (\lambda x[\text{Tim's_Dingo}(x)]) (\lambda x[\text{Tom's_Cross_Fox}(x)])^{13}$$

Such examples are interesting because they show that the phenomenon I have emphasized in the case of 5 characterizes different forms of statements and that the liberalization I have in mind allows us to “export” as many expressions as we need, independently of their type.

To sum up, we have discussed two cases in which, although sets (rather than individuals) are involved, the de re/de dicto distinction is as clear, and empirically motivated, as in the usual examples with individuals. This possibility of giving a formal representation to a more general version of that distinction is an advantage of the abstraction operator which ought to be utilized in a systematic way. And this liberalization would enable us to account for the whole range of opacity phenomena, without any restriction to singular terms.

Since we have seen that the appellation ‘de re’, in the recent tradition, seems to entail an exclusive reference to the cases in which an individual is involved,

we use the terms ‘opaque’ and ‘transparent’ to express the distinction discussed above. As I have stressed, formally speaking this distinction rests on the fact that in the transparent case (but not in the opaque one) a term (whether individual or not) is “exported” from within the intentional context. Intuitively, it is connected with an opposition between the different cognitive spaces (the reporter’s and the agent’s) which can be relevant for describing the situation at issue.

II. Specificity

The Problem

The idea that the transparent reading involves the existence of some particular individual the report is about, and some special epistemic relationship with it, has given rise to the conflation, in the case of indefinite noun phrases, between the transparent\opaque (t\o) distinction and the specific\nonspecific (s\n) distinction.

Take, for instance, Quine’s essay on propositional attitudes, where such sentences as:

- 7 Diogenes searches for a man
- 8 Diogenes believes that a man is generous

are associated, respectively, with the following pairs of structures:

- 7a d strives $(\exists x(\text{man}(x) \wedge d \text{ finds } x))$
- 7b $\exists x(\text{man}(x) \wedge d \text{ strives } (d \text{ finds } x))$
- 8a d believes $(\exists x(\text{man}(x) \wedge \text{Gen}(x)))$
- 8b $\exists x(\text{Man}(x) \wedge d \text{ believes } (\text{Gen}(x)))$ ¹⁴

What happens is that the same formal structures (based on the different scopes of quantifiers and intentional verbs) are used to account for both the t\o distinction and the s\n distinction.¹⁵ And the same metatheoretical justifications as before are given: a necessary condition for the truth of a b structure is that d is *en rapport* with the intended individual. In other words, this restriction on the agent’s epistemic access to the object of the intentional act is a necessary condition for the quantification into intentional contexts. For example, the formal opposition between 7a and 7b is intuitively explained in the following terms: In (b), but not in (a), Diogenes has some specific individual in mind. And this “specificity” is accounted for by the fact that, in the given logical form, the whole expression which corresponds to the quantified noun phrase is outside the intentional context and refers to some individual in reality (not only in Diogenes’ mental space).

1. Contexts

Certainly, one might stipulate that the s/n distinction is nothing but a terminological variant of the t/o distinction, which, as we have seen, is reconstructed in terms of different scopes assigned to quantified noun phrases. The idea is that the specific reading of an indefinite noun phrase corresponds to a structure where it has wide scope, i.e., to its “transparent” reading.

Actually, such a simplification may not do justice to the complexity of the phenomena at issue. And the reason is that, if the analysis developed in the previous section is correct, several types of transparent structures can be associated with an indefinite noun phrase, so that it would be misleading to speak of the specific reading of the phrase. The impression is that different problems lurk behind what linguists and philosophers have often called the s/n ambiguity.

To begin with, even the terminology is confusing. According to some, for instance, the s/n distinction also applies to “extensional” statements like

9 Diogenes met a beaver

The justification they give is that the person who utters 9 may, or may not, have some particular individual in mind, which means to be able (or not to be able) ‘to describe [this individual] in a predicative identificatory way’.¹⁶ In my opinion, the claim that ‘a beaver’ is ambiguous in this sense entails some odd consequences when other similar noun phrases are considered. Take, for instance, the sentence ‘Diogenes met two beavers’. In this case there are four possibilities, depending on whether both beavers are fully identifiable, or none, or just one (here, two subcases are possible). As a result, the noun phrase ‘two beavers’ should engender four possible readings in this context. But, for the same reasons, eight possible readings should be associated with ‘three beavers’ and, in general, for any numeral n , the noun phrase ‘ n beavers’ should have 2^n readings. Saying that Diogenes has met ten beavers would be ambiguous in 1024 different ways. Is this plausible?

If the psychological problem of how individuals are depicted in the speaker’s idiosyncratic imageries is left aside, 9 raises no problem of logical form. For (unlike the case of 7) no (structural) ambiguity is detectable in 9. Its truth conditions are uniquely determined. Nine is true if there is some beaver such that Diogenes met it (independently of the way such an animal can be identified by the utterer).¹⁷

One might conclude that indefinite noun phrases can engender ambiguity only in intensional contexts. This is quite correct, provided that this term is taken in a broad sense. The point is that there are several sources of intensionality besides the well-known modal or epistemic operators, and tense is one of them. Take, for example, a statement such as

10 A beaver builds dams

Unlike 9, it is ambiguous: The nongeneric reading and the generic one are both allowed. At first sight no intensional context (in the traditional sense) is distinguishable here. In particular, the absence of any intentional verb shows that, in the case of indefinite noun phrases, the possibility of alternative readings does not depend on the existence of epistemic contexts. So, from this point of view, the presence of intensional operators in the traditional sense is not required. But if the tense of the sentence (which is a source of intensionality) is considered, it is easy to see that it plays a central role in the ambiguity. This is proved by the fact that a statement like

11 A beaver is building dams

presents no such ambiguity.¹⁸

In fact, from an intuitive point of view, the main difference between 10 and 11 is that, whereas in the case of 11 a specific context is referred to, which involves some particular beaver, in the case of 10 all the (relevant) contexts where a beaver is present are to be considered. This is the reason for the universal (or quasi-universal) import of 10.

I have just spoken of the central role tense plays in such situations. So, it might look as though the “intensional” nature of 10 is to be accounted for in terms of tense logic: 10, on its generic reading, would entail an implicit quantification over instants or temporal situations. The reason I have introduced the notion of context, however, is that what we have here is a much more general phenomenon. The interaction between the verb phrase and the indefinite noun phrase selects a relevant set of circumstances (the contexts that involve the presence of a beaver), and the universal quantification concerns all these circumstances rather than mere instants. That is, fine-grained (or local) structures like contexts are what must be appealed to rather than instants of the entire world history, as is witnessed by this kind of example:

12 After a storm a beaver checks all the dams

which on the generic reading does not mean that in every (relevant) instant a beaver checks all the dams in the world (at that instant), but that in all contexts which identify a beaver and a relevant set of dams, this beaver checks these dams.

Returning to the s\ n distinction, let us consider the widespread (although often implicit) idea that this distinction captures a psychological or cognitive reality. We have seen that a statement such as

13 Diogenes believes that a beaver builds dams

is traditionally associated with the structures

13a d believes $(\exists x(\text{Beav}(x) \wedge \text{Builds_dams}(x)))$

13b $\exists x(\text{Beav}(x) \wedge d$ believes $(\text{Builds_dams}(x)))$.

The idea is that the latter structure, but not the former, expresses a “specific” belief, since the existential quantification, which has wide scope with respect to the intentional verb, refers to some individual in the “real” domain. But consider now

14 Diogenes believes that a beaver is building dams

In this case, too, a pair of structures similar to 13a and 13b respectively can be associated with 14:

14a d believes $(\exists x(\text{Beav}(x) \wedge \text{Is_building_dams}(x)))$

14b $\exists x(\text{Beav}(x) \wedge d$ believes $(\text{Is_building_dams}(x)))$.

To support the thesis that the belief expressed in 14a is not specific, the following argument is suggested: (i) Specificity entails existence; (ii) to exist is to be the value of a quantified variable; (iii) this kind of existence is not expressed by 14a, since the quantifier is prevented from playing its usual role (i.e., ranging over the given domain of individuals) by the presence of an intensional operator that has wide scope. In the light of these assumptions, the ambiguity determined by the presence of 14a and 14b is not only (correctly) interpreted in terms of the λ -distinction, but it is often characterized as referring to different kinds of intentional acts or states. One of the reasons given for this theoretical attitude is that 14a might be true even in a situation where the beaver at issue does not exist (if Diogenes, for example, is wrong), or in a circumstance in which Diogenes has just some vague clues about the existence of that eager beaver (recall the case of Forcheville), and so on.

Nevertheless, the essential difference between 14a and 14b may not concern the kind of belief which is to be ascribed to Diogenes. In both cases (witness the tense of the nested sentence) Diogenes can have the same kind of belief: the belief that some particular beaver is building dams. And even if he has very feeble justification for this conviction, or if the beaver is just an imaginary beaver, these are not good reasons for denying that, in this case, Diogenes has a nongeneric belief. From a grammatical point of view, this nongeneric character is clearly indicated by the progressive.

Thus, a first discrimination can be drawn from these preliminary remarks. The distinction between the generic reading of an indefinite noun phrase and the nongeneric, polarized, reading is independent of the distinction that in the previous section was characterized in terms of opacity and transparency. The latter distinction rests, in formal terms, on the difference between “external” and “internal” quantification; intuitively speaking, it captures two different ways of referring to the objects involved in the belief. The former, in its turn, can be for-

mally expressed by structures containing, respectively, a reference to some particular context (nongeneric, polarized reading) or a universal quantification over contexts (generic reading). In the case of 13, both these structures are appropriate (so that a new kind of ambiguity arises, besides the $t\backslash o$ ambiguity), although this does not hold of 14, where the tense selects just one kind of structure (the nongeneric one, although the $t\backslash o$ ambiguity is still present, naturally).

2. A More Articulated View

In short, we are faced with two different issues. The first concerns the way the reporter r describes the content of s 's intentional act or state (where s is the agent). This description can be conceived of, as it were, from inside s 's cognitive space – or from outside; and in this case the exported term (not necessarily a singular term) specifies which component of the nested proposition is used in a “transparent” way. So, formally speaking, what is relevant here is a distinction in terms of scopes, which accounts for the $t\backslash o$ distinction.

The second concerns the “genericity” which is to be attributed to the indefinite noun phrase, depending on whether a given context or a whole set of relevant contexts is referred to. But this distinction is independent of the other and, insofar as it is semantically relevant, it boils down to the alternative between the nongeneric reading of an indefinite noun phrase, which is polarized toward some particular individuals, and the generic one, where this polarization is absent and a whole class of individuals is referred to: a wellknown phenomenon which has nothing to do with the presence of intentional verbs.

Thus, at this preliminary level, there are two distinct oppositions:

Polarized\generic (P\G) and Transparent\opaque (T\O).

We shall see in a moment how to replace the latter opposition with a more articulated set of distinctions to account for the different kinds of transparency discussed in section I. But even adopting this simplified view, it can be noticed that, in the case of a sentence such as 13 (‘Diogenes believes that a beaver builds dams’), we have these possible combinations:

1: P + T 2: G + O 3: P + O 4: G + T

As a result, 13 has at least four different kinds of readings. Here are some examples:

- 13.1 Diogenes believes that a beaver builds dams. {It is the beaver he saw here yesterday, but he does not know that it was a beaver. He thinks it was an otter.} (P + T)
- 13.2 Diogenes believes that a beaver builds dams. {Poor man, he does not know that the animals he has in mind are not beavers.} (G + O)

- 13.3 Diogenes believes that a beaver builds dams. {He says that he saw it practicing around here. He does not know that it was an otter.} (P + O)
 13.4 Diogenes believes that a beaver builds dams. {I had trouble understanding that he was ascribing this property to beavers. His zoological knowledge is very poor.} (G + T)¹⁹

Note that in natural language the p\g distinction (as identified with the distinction between the polarized, nongeneric, reading of an indefinite noun phrase and the generic one) is not only semantically perspicuous, but it has interesting consequences on the level of anaphoric relations. Consider, for instance, this possible combination:

- 13 Diogenes believes that a beaver builds dams +
 13' Plato thinks that it is a very intelligent animal

On the polarized reading of the indefinite noun phrase which occurs in 13, 'it', in 13', cannot be interpreted as a pronoun of "laziness", i.e., as a mere substitute for that noun phrase. In fact, on this reading, 13 + 13' is not equivalent to 13 +

- 13'' Plato thinks that a beaver is a very intelligent animal

On the contrary, 13 + 13' and 13 + 13'' are equivalent if the indefinite noun phrase has a generic reading, so that 'it' can be interpreted as a pronoun of laziness.

Let us disregard the generic reading of an indefinite noun phrase like 'a beaver' in 10 and 13 and concentrate on what I have called its polarized (i.e., nongeneric) reading. In intuitive terms, what distinguishes these two readings is the fact that, while the former has a universal²⁰ (or quasi-universal) import, the latter is to be reconstructed in terms of existential quantification. But further distinctions are needed here.

Let us resume our analysis of sentence 13. Once we have put aside the generic reading of the noun phrase, what we are left with is the polarized reading, which, as we have just seen, requires the presence of an existential quantifier in the logical form. From this point of view, two different structures are already available, i.e., 13a and 13b, repeated here for convenience:

- 13a d believes ($\exists x(\text{Beav}(x) \wedge \text{Builds_dams}(x))$)
 13b $\exists x(\text{Beav}(x) \wedge \text{d believes}(\text{Builds_dams}(x)))$.

Their truth conditions are quite distinct, and thus 13a has usually been considered as expressing the nonspecific reading, whereas 13b has been associated with specificity. But, after the liberalization introduced in the previous section, other logical structures are available. In particular:

- 13c $\exists x(\text{d believes}(\text{Beav}(x) \wedge \text{Builds_dams}(x)))$
 13d $\lambda P[\text{d believes}(\exists x(P(x) \wedge \text{Build_dams}(x)))](\lambda x[\text{Beav}(x)])$

It is easy to see that their truth conditions do not coincide, and that they are distinct from the truth conditions which can be assigned to 13a and 13b. For example, 13c is quite appropriate in the situation described by 13.3, where there is a particular individual of which Diogenes believes that it is a beaver and builds dams, although this individual cannot be said to be a beaver from the outside point of view. On the contrary, 13d would be appropriate in a situation in which: (i) the reporter is referring to the group of beavers that live in the wood near Diogenes' cottage; (ii) Diogenes does not know that they are beavers, since he mistakes them for some other kind of animal; (iii) convinced that they are the only animals in the wood, he believes that one of them has built the dam near his cottage (which has formed by accident). Not surprisingly, this situation is quite similar to the situation described in the first part (the restaurant, the soccer players, etc.) to justify 5c; in fact, 13d and 5c have the same logical structure.

Thus, in view of these different logical forms, to speak generically of transparent and opaque structures, as I have done at a preliminary level, is an oversimplification. Let us try to get rid of it.

My suggestion is that the usual s/n distinction conceals a more complicated situation, which our interpretation of specificity must take into account. The specific reading of an indefinite noun phrase can no longer be identified *tout court* with its transparent reading. In fact, as is shown by our analysis of 13, the same sentence can be associated with several structures in which some component of the expression translating the indefinite noun phrase occurs in a transparent position. Fortunately, it is not difficult to realize that the structures represented in 13a-d can be connected to the original noun phrase in a systematic²¹ way. Omitting the technicalities, it is enough to note that a sentence containing an indefinite noun phrase such as 'a beaver', or, more generally, 'a CN' – where CN is a common noun of any complexity ('beaver', 'beaver that likes vegetables', etc.) which expresses the descriptive content of the noun phrase – is usually associated with a structure like:

$$\exists x \dots CN'(x) \dots$$

where CN' is the translation of CN, the descriptive content of the given noun phrase. Thus, in such structures, two essential components correspond to the noun phrase: the quantifier itself (with the variable it binds) and (the translation of) the descriptive content. It is quite natural to think that, in the presence of an intentional operator, it is possible to obtain different logical structures, depending on which component occurs within the scope of this operator. Our structures 13a-d instantiate this range of possibilities. Using '+' ('-') to express the fact that the relevant component is outside (inside) the scope of the intentional operator, the situation can be described as follows:

	<i>Quantifier</i>	<i>Descriptive Content</i>
13a	–	–
13b	+	+
13c	+	–
13d	–	+

Now, if the role of an indefinite noun phrase like ‘a CN’ is (in most cases) to introduce an individual x satisfying the descriptive content CN, the complication determined by an intentional context such as ‘ s believes that . . .’ is that the introduction of x can be circumscribed within s ’s conceptual space – as in (a) and (d) – or can also be endorsed from an external point of view – as in (b) and (c). And the same holds of the descriptive content, which can be seen as an essential part of the agent’s cognitive apparatus ((a) and (c)), or as a way of characterizing the relevant individual “from outside” ((b) and (d)).

Let us sum up. Our discussion of 14a and 14b has questioned the hypothesis that the opposition $s \setminus n$ can be traced back to a distinction between different types of intentional acts or states, i.e., the distinction which, as we saw at the outset, is improperly used to explain the $t \setminus o$ opposition as well. The point is that an “opaque” structure like 14a – where both components of the indefinite noun phrase occur within the scope of the intentional verb – can be quite in order to express a nongeneric belief, i.e., the belief that some particular beaver is building dams. But, once this reconstruction of the opposition $s \setminus n$ in terms of the agent’s states of mind is given up, there is a more correct way of establishing a systematic connection between $s \setminus n$ and $t \setminus o$. This time, the terms ‘specific’ and ‘nonspecific’ are meant to point out a difference concerning the conceptual spaces where the introduction of the relevant individual takes place. Specificity, in this sense, means that the individual introduced by the existential quantifier can be referred to also from a point of view which is located outside²² that of the agent. In other terms, the specific reading is to be associated to the logical forms in which the quantifier *stricto sensu* has an external (or transparent) occurrence.

Our analysis of 13 has shown that the mere identification of specificity with transparency is an oversimplification, for there are different kinds of transparency, depending on which component of the indefinite noun phrase is “exported”. In the light of this complexity, my proposal is that a logical form should be said to express a specific reading if the existential quantifier has scope over the intentional verb, and to express an external (internal) reading if the descriptive content is outside (inside) the scope of the intentional verb.

As a result, in the case of a sentence like 13, several readings of the

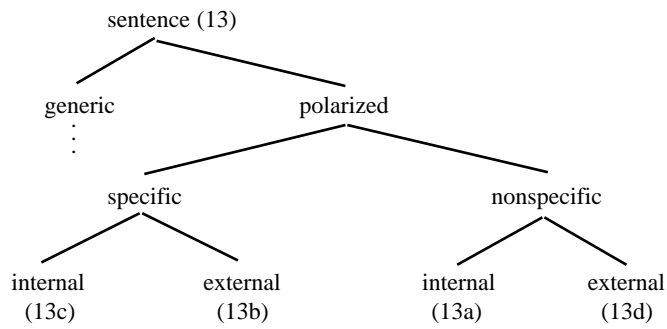


Figure 10.1

indefinite noun phrase can be expressed by nonequivalent logical forms. First of all, we have to distinguish generic (i.e., universal or quasi-universal) readings, which have not been analyzed here, from polarized (i.e., existential) readings. Within the latter class, two subclasses can be individuated: specific versus nonspecific readings, depending on whether the existential quantifier is outside the scope of the intentional verb or not. Finally, in both cases we get a further distinction when we look at the place occupied by the descriptive content, so that external readings are separated from the internal ones. In other words, the alternatives illustrated in the previous scheme determine the picture diagrammed in Figure 10.1.

Apart from questions of terminology, an interesting feature of this picture is that it accounts for the systematic relations which connect *both* components of an indefinite noun phrase to the scope of an intentional verb like ‘believe’. But an extension to other kinds of intentional verbs is not so obvious. The problem is that, in many cases, logicians have characterized as a uniform class a wide range of verbs expressing mental acts or states. But a sharper analysis might show some interesting differences in behavior. Here is an intriguing illustration of this point.

3. A Puzzle

In some languages, if the relative clause which follows the noun is in the subjunctive mood, the generic (i.e., universal or quasi-universal) reading can be required. For example, in Italian such a sentence as:

- 15 *Un castoro che abbia una famiglia numerosa costruisce molte dighe*
 [A beaver that has (+ pres., + subj.) a big family builds many dams]

has only the generic reading. In other terms, the (usual) “existential” interpretation of the indefinite noun phrase is not available (whereas both readings are possible if the indicative mood is used).

So far, so good. An adequate theory of generics should account for this systematic feature of Italian and other languages. But the problem arises when such sentences as 15 are in the scope of an intentional verb, for something puzzling happens. In some cases (as predicted by the observation that 15 has only the generic reading) only one interpretation is available. This is true of verbs like ‘*credere*’, ‘*sapere*’ (‘believe’, ‘know’, etc.). For instance, in the sentence:

16 *Diogene crede che* [believes that] *un castoro che abbia una famiglia numerosa costruisca molte dighe*

the nested sentence can have only the generic interpretation (once more, the ambiguity is possible if the relative clause is in the indicative mood).

But in other contexts [it is the case of verbs as ‘*sperare*’, ‘*volere*’, ‘*temere*’ (‘hope’, ‘want’, ‘fear’, etc.)], both interpretations (i.e., the universal and the existential reading) are available. Take for instance the following sentence:

17 *Diogene spera che* [hopes that] *un castoro che abbia una famiglia numerosa costruisca molte dighe*

In this case, what I have called the (usual) existential reading of the indefinite noun phrase is even more natural than the universal one. In fact, the most immediate interpretation of 17 is that Diogenes hopes that there is some beaver (with the characteristics specified in the relative clause) which builds many dams.

What is puzzling in this situation is that when you place a sentence such as 15 within the scope of some intentional verbs (‘believe’, ‘know’, etc.) you get a certain result: The universal import of the noun phrase is preserved, and no alternative reading is possible. But when you place it within the scope of other intentional verbs (‘hope’, ‘want’, etc.) you get a different result: the polarized (i.e., “existential”) reading – which is not available when 15 is taken in isolation – is then favored. This difference sounds mysterious from the traditional viewpoint, that hardly discriminates at all between intentional verbs according to their logical properties. Thus our puzzle can be articulated into two questions. Why does the “existential” reading, which is impossible in 15, become available when 15 is in the scope of some intentional verb? Why does this not happen with other intentional verbs? I have no solution to offer, just a few preliminary remarks, whose aim is to stress some unnoticed differences. As a consequence, some relevant distinctions might be introduced into the class of intentional verbs.

The essential observation is that the same phenomenon occurs with modal operators (e.g., ‘*necessariamente*’, ‘*possibilmente*’) and with some adverbs (e.g., ‘*sempre*’ [always], ‘*a volte*’ [sometimes]). If, at the beginning of the sentence, you replace the intentional verb with ‘*necessariamente*’ or ‘*sempre*’, so that the relevant sentence is, for example:

18 *Necessariamente un castoro che abbia una famiglia numerosa costruisce molte dighe*

then only one reading is available. It is the universal or generic one: exactly as happens with ‘believe’. But if ‘*possibilmente*’ or ‘*a volte*’ is introduced, the existential reading of the indefinite noun phrase is available, or even favored (exactly as in the case of ‘hope’). The most natural interpretation of the sentence:

19 *A volte un castoro che abbia una famiglia numerosa costruisce molte dighe*

is that there are situations in which some beaver with a big family builds dams. But notice that if the indefinite noun phrase has wide scope with respect to the adverb ‘*a volte*’, as in:

20 *Un castoro che abbia una famiglia numerosa costruisce a volte molte dighe*

then only the generic or universal reading is natural (i.e., the intended meaning would be, roughly, all beavers with a big family build, sometimes, many dams).²³

These examples seem to suggest that what is essential here is the interaction, in terms of their respective scopes, between two different sources of quantification over contexts or circumstances. One is determined by the generic reading of the indefinite noun phrase, the other by modal operators, adverbs, etc. But, apart from this vague guess about the nature of the puzzle, the last examples shed some light on the peculiarities of intentional verbs with regard to the s/n distinction, for they point out a difference in behavior. In fact, in the cases under discussion, ‘*credere*’, ‘*sapere*’, etc. share some crucial properties of operators or adverbs which involve a “universal” quantification over circumstances (‘*necessariamente*’, ‘*sempre*’), whereas ‘*sperare*’, ‘*volere*’, etc., parallel operators or adverbs that involve an “existential” quantification (‘*possibilmente*’, ‘*a volte*’). Unfortunately, a systematic analysis of such structural properties has still to be started.

ACKNOWLEDGMENTS

Long discussions with P. Casalegno about the nature of generics during the preparation of a co-authored essay on “Contexts” have helped to make my ideas clearer on some

uses of indefinite noun phrases. This last remark must be taken as an expression of gratitude and also as a justification, since I refer to the above mentioned paper for the formal treatment of generics which is presupposed (but not expounded) in the last section of this chapter. I wish to thank L. Bonatti, J. Brandl, G. Chierchia, D. Marconi, A. von Stechow, and G. Usberti for helpful comments on earlier versions of this essay.

NOTES

1. See, for instance, such notions as “vividness” of a term in Kaplan or “knowing who” in Hintikka.
2. D. Kaplan, 1969. “Quantifying in” in *Words and Objections*, D. Davidson and J. Hintikka, eds., Dordrecht: Reidel, pp. 178-214.
3. J. Hintikka, 1975. *The Intentions of Intentionality*, Dordrecht: Reidel, pp. 165-ff.
4. *Ibid.*, pp. 211-12. Referring to the *de dicto/de re* distinction, Hintikka writes:

It is in fact honored in terminology and not only in time, for it was already in the middle of the middle ages dubbed the distinction between acts *de dicto* and *de re*. Let us suppose that you can truly be said to believe that the present Prime Minister of Denmark is a social democrat. Then you might have a particular Danish politician in mind of whom you believe this. . . . In such circumstances, your belief is *de re*, the *res* in question being the person whom the belief is about. However, the identification may be a part of the specification of the content of your belief. Then you need not have any particular politician in mind. . . . Then your belief is *de dicto*.

5. Neither would this representation have any serious “causal” link with the intended individual. (Suppose, for instance, that Swann has never seen or heard his rival, but that he has intercepted some letters Odette wrote to her lover.)
6. In “Intensions Revisited” (*Midwest Studies in Philosophy*, 2, 1977) Quine emphasizes this difficulty, and the moral he draws is that the very notion of a *de re* statement is to be rejected: “Where does the passing of the vivid designator leave us with respect to belief? It leaves us with no distinction between admissible and inadmissible cases of exportation. . . . We end up rejecting *de re* or quantificational propositional attitudes generally, or on a par with *de re* or quantified modal logic.” Quine is completely right if the distinction between *de re* and *de dicto* is based on the different “strength” of the relevant intentional acts, since, as we have just seen, it is hard to characterize this concept in some definite way. But his skepticism is less justified if exportation (which distinguishes *de re* from *de dicto* reports) is interpreted as a switch of cognitive space. One of the aims of this chapter is to show that the class of expressions made “transparent” by this switch (i.e., by exportation) is not restricted to individual terms. As a consequence, the requirements questioned by Quine (which concern the agent’s epistemic access to the relevant individual) cannot be used in order to characterize, in general, *de re* reports.
7. I tried to give some philosophical justification (in a phenomenological framework) of this way of conceiving the *de re/de dicto* distinction in my essay “A Problem about Intentionality,” *TOPOI*, 1986, 5, 91-100.
8. Or two, three, . . . , individuals, if ‘believes’ is treated as a “multigrade” predicate with varying arity. See Quine’s “Intensions Revisited” for this idea.
9. Suggested by P. Casalegno.

10. More in general, there is *nobody* that can be pointed out as the individual Swann's belief concerns. This is the main difference with respect to Forcheville's example, in which, from the reporter's point of view, *there is* a person that Swann wants to kill.
11. My argument aims to show the plausibility of a structure like 5c as a possible logical form associated with some statements of natural language. So, if the third possible reading of 5 I am discussing is not accepted (or if the equivalence between this reading and 5' is rejected), 5' itself can be referred to as the kind of statement that 5c accounts for.
12. Incidentally, this fact raises an interesting question, for a second-order structure (or, equivalently, a first-order one, but in a many-sorted language) is essential here. As far as I can see, there is no way to account for this reading of 5 except in a second-order framework (or in a many-sorted one). It goes without saying that in the case of a logical form such as 5c lambda conversion cannot be applied, otherwise 5c would be equivalent to 5b. An account of the semantic theories that meet this requirement is beyond the purpose of this chapter. (I am indebted to A. von Stechow for some interesting remarks on this point.)
13. A possible paraphrase of this formula is:
Of Tim's dingoes and Tom's cross foxes s believes that the former are more numerous than the latter
Notice that other logical forms can be proposed instead of 6'. But my thesis about the need to liberalize exportation is independent of this issue. It is the plausibility of the thesis itself, rather than the correctness of the particular logical forms I take into consideration, that I intend to show here.
14. Actually, Quine presents more complicated structures in order to avoid such intensional entities as propositions, but this is not essential to the present discussion.
15. In "Quantifiers and Propositional Attitudes" (*The Journal of Philosophy*, 53, 1956) Quine argues, for instance, that the formulas:
a. $\exists x(\text{Ralph believes that } x \text{ is a spy})$
b. $\text{Ralph believes that } \exists x(x \text{ is a spy})$
may be unambiguously phrased respectively as "There is someone whom Ralph believes to be a spy" and "Ralph believes there are spies." The latter paraphrase is chosen to stress that what is at issue is just a "generic" belief in the existence of spies. But does (b) necessarily express only a "generic" belief? Imagine, for instance, a situation in which Ralph is sure that a particular person who, in his imagination, is characterized by a set of identifying properties, is a spy. Since the existence of this fictitious person is taken for granted from Ralph's epistemic perspective, (b) – and not (a) – is appropriate to describe this situation. But what the belief (b) refers to in this case is not the vague conviction that the class of spies is not empty. It is something specific, although the intended individual does not exist.
16. See, for instance, A. Kasher and D. Gabbay, "On the Semantics and Pragmatics of Specific and Non-Specific Indefinite Expressions," *Theoretical Linguistics*, 3, 1976: 153.
17. In "Referential and Quantificational Indefinites" (*Linguistics and Philosophy*, 5, 1982: 379), J. Dean Fodor and I. Sag correctly stress that there is no s/n ambiguity in such a sentence as 9. But they present some "critical facts" in order to prove that there exists a nonquantificational reading of indefinite noun phrases (what they call

the referential reading). I ignore this problem here, because the facts they refer to (which, in my opinion, are not conclusive) deserve a separate discussion.

18. I do not mean that the generic reading of 11 is absolutely impossible. It is easy to find contexts of discourse that allow it. What is true is that the nongeneric reading is more natural. Furthermore, there are cases in which the generic interpretation of an indefinite noun phrase is really inconsistent with some tenses. For example, in Italian, the simple past tense uniformly selects the specific reading. In:

Un castoro costruì dighe
[A beaver built dams]

the generic interpretation is impossible.

19. As I have already said, the problem of how formally to represent the generic reading of indefinite noun phrases deserves a separate discussion. (See the essay on “Contexts” mentioned at the outset.)
20. This does not mean that in the logical form such a noun phrase as ‘a beaver’ should be treated *tout court* as a case of universal quantification over individuals. To avoid this ad hoc solution, which would make the determiner ‘a’ ambiguous on its own, this determiner must keep its usual “existential” meaning, while the universal import of a sentence like 10 (on its generic reading) can be traced back to a universal quantification over contexts. The idea is that, for the reasons I have mentioned above, the tense and the aspect of the verb phrase play a crucial role from this point of view. The resulting logical form would correspond, roughly speaking, to the following paraphrase: For every context in which a beaver is present, this beaver builds dams. Or, more naturally: However a beaver is identified, it has the property of building dams. I cannot dwell on the formal aspects of this solution. For these details, see the essay on “Contexts.”
21. This is why the ideas I have discussed so far can be developed in a proper formal framework where compositionality is preserved. The liberalization of exportation I have suggested is already possible in Montague Grammar, where there are no restrictions on the use of the lambda operator. But, as far as I know, this possibility has not been exploited.
22. Being identifiable “from outside” does not necessarily mean, for a given individual, being “real”. Apart from philosophical considerations, this liberal view of the domain is suggested by the analysis of the discourse (on its polarized or nongeneric reading) formed by 13 + 13’, for ‘it’ – in 13’ – must be interpreted as a bound anaphora (i.e., in logical terms, as a variable bound by the existential quantifier), although there is no real beaver that can be identified as the animal at issue. On the other hand, it is of the same animal that Diogenes and Plato believe something, for ‘it’ is not a mere pronoun of laziness. Thus, to account for this anaphoric relation which crosses both intentional contexts, the quantifier must occur outside these contexts. (From this standpoint, Geach’s well known problem about Hob, Nob, and their beliefs is no longer puzzling if the referential framework is not restricted to “real” individuals. To guarantee the soundness of an anaphoric relation, the “existential” quantifier just has to introduce an object of discourse, rather than a fragment of reality.)
23. In the theory of contexts I have already referred to, this universal meaning would be reconstructed in terms of a logical form that corresponds, approximately, to the following paraphrase: In all the contexts in which there is a beaver with a big family, this beaver sometimes builds many dams.