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# *Leibniz's Theory of Universal Expression Explicated*

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## I The expression problem

According Leibniz's thesis of *universal expression*, each substance expresses the whole world, i.e. all other substances, from its particular, unique *viewpoint*, or, in other words, the *complete individual notion* of a substance — the comprehensive notion which includes, in internal terms, everything truly attributable to a substance — is such a universal expression of, or 'involves,' every other substance, or, as Leibniz also frequently states, from any given complete individual notion one can 'deduce' or 'infer' or 'demonstrate,' or from it 'follows,' or it 'leads to,' (all truths about) the whole world.<sup>1</sup> On the other hand, in Leibniz's

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1 While Leibniz's statements of his doctrine of universal expression (and viewpoints) in general terms are so numerous that I think there is no need to refer to any, passages in which he states this in terms of deduction and the like are of special interest with respect to this paper. Some of these can be found in the following places: A VI, 4, 306-7 (1679?); A VI, 4, 553 (1683-5?); DM 8, DM 13; LA 37, LA 41, LA 42, LA 44, LA 46; A VI, 4, 805-6 / L 226 (1686-7?); NE 2.25.10 (A VI, 6, 228). It may also be useful to look at what Leibniz says about expression itself. When Arnauld complains that he does not understand what Leibniz means by 'expression,' Leibniz defines this term as follows (LA 112): 'One thing *expresses* another

view each (created) substance is *internally individuated, self-sufficient and independent* of other (created) substances,<sup>2</sup> and the complete individual notion of a substance is such that it respects this requirement. Leibniz also says, with an apparent intention of pronouncing his doctrines of expression and self-sufficiency at the same time, that each substance is ‘as if a world apart,’ or like a ‘multiplication’ or ‘concentration’ of the world.<sup>3</sup>

What may be called *Leibniz’s expression problem* is now, how to reconcile these views with each other, that is, how a substance that (somehow) ‘expresses’ or ‘involves’ the whole world (i.e. every other substance), even in the sense that the whole world can be ‘inferred’ from its complete individual notion, can be self-sufficient, independent, internally individuated and ‘as if a world apart’ — for does not this self-sufficiency seem to block the expression of others. The purpose of this paper is to give an *exact* account of this tricky problem of universal expression, an account that retains substances’ self-sufficiency under the constraint that the whole world is to be obtained from complete individual notions. More precisely, the aim is to provide a detailed construction of complete individual notions, within the confines of which it can be shown, *explicitly*, how truths about (or ‘involving’) all other substances are derivable from a given complete individual notion (i.e. how it is a universal expression) even though this complete individual notion is given in terms that adequately respect internal individuation, self-sufficiency and independence. It will also be shown how the explication of universal expression to be given accounts for Leibniz’s thesis of *universal change*, i.e. the view that any change in any substance is

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(in my terminology) when there exists a constant and fixed relationship between what can be said of one and of the other. This is the way that a perspectival projection expresses its ground-plan. Expression is common to all forms, and it is a genus of which natural perception, animal sensation and intellectual knowledge are species.... Now, this expression occurs everywhere, because every substance is in harmony with every other and undergoes some proportionate change which corresponds to the smallest change occurring in the whole universe.’ See also, for instance, A VI, 4, 1370-1 / L 207-8 (1677?); T 356-7; C 15 / MP 176-7 (c. 1712), and see Kulstad (1977) for a study of Leibniz’s uses of ‘expression.’

- 2 Again, passages in Leibniz’s writings in which he shares his views about self-sufficiency (internal individuation, independence, self-containedness, self-sustenance) are so numerous that there is probably no need to refer to any explicitly.
- 3 For ‘world apart,’ see, for example, DM 14, DM 32; LA 46-7, LA 57; A VI, 4, 1620 / MP 79 (1688?); SN 14, SN 16; G4 578 / WF 153 (1702); NE 4.10.10 (A VI, 6, 440); T 291. For ‘multiplication’ and ‘concentration,’ see DM 9, LA 98, G4 518 / WF 80 (1698), G6 538 / L 559-60 (1702), G3 347-8 / WF 225 (1704), G2 278 / AG 184 (1705), G7 566-7 (1706), M 57, G3 623 (1714), LC 5.87.

reflected as a real, internal change in each and every other substance. In the final section I shall address, briefly, various potential objections to the account given.

## II Complete individual notions, denominations, and monadic ascriptions

On the basis of substances' self-sufficiency, it is (as indicated above) plausible to ascribe to Leibniz the view that the complete individual notion of a substance, although involving every other substance, or being a universal expression, is as such an *accurate* or *proper* way of determining that substance, *respecting* its self-sufficiency, independence and internal individuation. For example, even assuming that 'Helen loves Paris' is true, Helen's complete individual notion does not really contain the notion expressed in 'loves Paris' for this would violate the self-sufficiency requirement (and, furthermore, would leave us with the question of *Paris's* individuation). In the interest of fixing terminology, and keeping clearly in mind the difference between what is strictly speaking *in* a complete individual notion, viz., notions that respect self-sufficiency, and what can somehow be inferred or deduced from it, let us say that a complete individual notion *consists in* the former notions (or that these are *in* a complete individual notion) while *involving* also the latter.

How, then, should we understand the distinction between those notions that 'respect self-sufficiency' and those that do not? It seems natural to suppose that this distinction coincides with that between intrinsic and extrinsic denominations.<sup>4</sup> An *intrinsic denomination* of a substance, such as (the one expressed in) 'is tall' in 'Helen is tall,' is ex-

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4 There appears to be some disagreement in the literature over the nature of denominations. Benson Mates (1986, 218), for instance, takes them to be notions (concepts, ideas), on the basis of Leibniz's stating, e.g. in LA 56, that complete individual notions *contain* denominations. Also, Leroy Loemker (L28, 271 n. 4) holds that denominations are, 'as the term "denomination" suggests,' 'modifications as observed by the mind.' In contrast, Massimo Mugnai (1992, 101) prefers to construe extrinsic denominations as 'linguistic expressions which designate relations.' While the construal of denominations as linguistic entities seems somewhat more natural to me (since 'is tall,' for instance, might be thought of, when applied to Helen, as 'naming' or, indeed, denominating, her as a tall person), I shall freely talk of denominations either as notions or as linguistic entities (and say things like 'the denomination 'is tall' is contained in a complete individual notion,' which may be taken as a sloppy wording of either 'what is expressed in the denomination "is tall" is contained ...' or 'the denomination expressed in "is tall" is contained ...').

clusively *about* that substance (Helen) in the sense of involving no other substances, or representing that particular substance in a manner that does not make it appear as not self-sufficient. In contrast, an *extrinsic denomination* of a substance, such as Helen's denomination (expressed in) 'loves Paris,' does not represent Helen as she is on her own but only in relation to Paris. Leibniz's explicit view, showing again his commitment to internal individuation and self-sufficiency of substances, is that extrinsic denominations of a substance are *founded* or *grounded* in, or *result* or *arise* from, its intrinsic denominations.<sup>5</sup>

If intrinsic denominations are then taken to be those which respect self-sufficiency (and extrinsic denominations those which do not), one should give exact criteria for the demarcation between these types of denominations. An examination of some attempts in the literature to spell out the separation shows that this task is harder than one might expect. Peter Remnant and Jonathan Bennett offer the following: 'An intrinsic denomination of a thing is a characterization of it which involves only the thing itself, whereas an extrinsic denomination relates it to some-

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5 See, for instance, A VI, 4, 308 (1679?); A VI, 4, 1458 (1680-4?); DM 8; A VI, 4, 996 (1688?); A VI, 4, 1645-6 / AG 32 (1689?); C 8-9 / MP 133-4 (c. 1696); G2 240 / L 526-7 (1702); G2 249-50 / AG 174-5 (1703); NE 2.27.3 (A VI, 6, 231); LH 4.8 61r (1715-6). In many of these passages — as well as in A VI, 4, 1503 / L 365 (1683-6?); A VI, 4, 1618 / MP 77-8 (1688?); NE 2.25.5 (A VI, 6, 227) — Leibniz expresses his thesis of intrinsic foundation by saying that there are no *purely* extrinsic denominations, or denominations that apply to a substance without there being anything in the substance itself (expressed in its intrinsic denominations) *accounting for* them thus applying, or, perhaps more transparently, denominations such that there might be a change in them applying to that substance without there being any (real, internal) change in the substance itself (see especially A VI, 4, 1645-6 / AG 32, 1689?). See here Maunu (2004b, esp. Sec. 3). It may seem to contravene the distinction, made above, between 'consisting in' and 'involving' that Leibniz writes in the Arnould Correspondence that a complete individual notion of a substance 'contains' (*comprendre, enfermer*) 'the whole succession of external things' (LA 12), 'everything that can be said of the thing' (LA 131), and 'all its [i.e., that substance's] denominations, even those that one commonly calls extrinsic' (LA 56). However, it is quite clear that Leibniz takes complete individual notions to consist exclusively in intrinsic (or self-sufficiency respecting) denominations, for he (more often) states only that a complete individual notion 'involves' or 'leads to' (all truths about) the whole world (see above). The 'containing' of extrinsic denominations in complete individual notions, it is plausible to hold, is only *implicit* in that only the intrinsic foundation of what is extrinsic is *in* a complete individual notion, or, as Leibniz sometimes says, the containing is *virtual* (e.g. A VI, 4, 553 (1683-5?); A VI, 4, 671 / MP 93-4 (1685-6?); DM 8, DM 13). In short, the claim (advocated, e.g., by Hidé Ishiguro (1990, 131-2), Mark Kulstad (1980, 223-4) and Clifford Brown (1990, 38-42)) that Leibniz could accept in a complete individual notion of Helen, for instance, a notion like the one expressed in 'loves Paris' violates Leibniz's requirement of internal individuation of substances.

thing else' (NERB xxxvi). Benson Mates (1986, 218) characterizes intrinsic denominations as those that do not make 'a reference, via a name or a quantified variable, to some individual or individuals other than' the substance in question. Jonathan Bennett (2001, 335), in turn, tells us both that in 'intrinsic denomination' "'intrinsic" means "monadic," one-place, pertaining only to the one subject and not involving any other' and that 'Fx is a monadic truth if neither it nor its contradictory entails the existence of any individual other than x.' Is then the characterization 'loves Helen' an intrinsic or extrinsic denomination? On the Remnant-Bennett view it would seem to be intrinsic when taken as describing Helen (for in 'Helen loves Helen,' i.e. 'Helen loves herself,' Helen is not related to anything else) but extrinsic when taken as describing anything (anybody) else. What about 'loves somebody' as a denomination of somebody, say, Helen? Since this cannot be regarded as saying (or implying) that Helen is related to something (or somebody) *else* (for 'loves somebody' is true of Helen even when she loves only herself), it seems not to be an extrinsic denomination. On the other hand, it might be insisted that 'in general' it does not 'involve only the thing itself,' i.e. that it cannot be regarded as an intrinsic denomination. Thus, the Remnant-Bennett explication appears to be problematic in that it does not fully delineate the distinction between intrinsic and extrinsic denominations, or leaves us with 'middle denominations' (such as 'loves somebody'), about which Leibniz seems to say nothing. Turning then to Mates (1986) and Bennett (2001), even though the general tenor of their respective discussions strongly suggest that they are partial to classifying 'loves somebody' and the like as extrinsic, this by no means follows from their respective delineations: as already indicated, 'loves somebody,' when applied to, say, Helen, cannot be said, in *any* sense, to 'make a reference' to some other individual, and cannot, either, be said to involve some other substance (and, furthermore, neither 'Helen loves somebody' nor its contradictory entails the existence of some other substance).

The most candid formulation of the claim that intrinsicness means, for Leibniz, strict one-placedness is given by Howard Burdick (1991, 2): 'Leibniz could only justify a purely monadic logic, i.e., one with no relational predicates.' (Perhaps this is what Mates and Bennett really mean as well, though this is not entirely clear.) This suggestion, however, has the (further) problem that since, say, 'Brutus kills Caesar' contains a dyadic predicate, so does, certainly, 'Tully kills Cicero,' even though Tully is the same as Cicero and thus 'Tully kills Cicero' is unquestionably intrinsic.<sup>6</sup>

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6 See Maunu (2004a, Secs. 2-3) for further discussion of Leibniz's views on intrinsicness.

Now, recalling that all truths about the whole world, including truths such as ‘Helen loves Paris’ (or ‘*Lhp*’), are supposed to be deducible from complete individual notions, the suggestion (explicit in the ‘purely monadic logic’ proposal) that we are to manage without polyadic predicates carries with it an insurmountable logical problem. For it is not only intuitively but also demonstrably impossible to infer (in any sense of ‘infer’) anything relational such as *Lhp* from any combination of representations that utilize only monadic predicates. Thus, the rejection of polyadic predicates seems to amount to denying the possibility of the inference of the whole world from complete individual notions. This inference doctrine, however, amounting to the thesis of universal expression, is something Leibniz repeats over and over again (as indicated above); accordingly, we must give up the assumption that Leibniz’s self-sufficiency requirement means that only strictly monadic predicates are allowed (in the representation of complete individual notions).<sup>7</sup>

In view of these considerations, I propose, as a *via media* between (expressionwise hopeless) ‘purely monadic logic’ and (self-sufficiency violating, independencewise unacceptable) explicitly dyadic representations (à la ‘*Lhp*’), that we accept, as self-sufficiency respecting, what may be termed *monadic ascriptions*, or, more properly, denominations arising from such ascriptions. These are ascriptions that are, in a quite natural and appropriate sense, *about* one substance only, even if they contained polyadic predicates. Examples of such ascriptions are, besides ‘Helen is tired’ and other unquestionably one-placed predications, ascriptions like ‘Helen loves’ and ‘Paris is loved’ (i.e. ‘ $\exists yLhy$ ’ and ‘ $\exists xLxp$ ,’ respectively), which contain the dyadic ‘loves’ but are about or refer to a single substance. These ascriptions may be called monadic because they are about one *particular* substance only, in the sense of not expressing the complete individual notion of any other substance.<sup>8</sup> I

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sicality, with references (besides the ones already mentioned in the text) to Russell (1937), Broad (1950), Parkinson (1965), Rescher (1967), Mates (1968), Kulstad (1980), and, especially, Cover and O’Leary-Hawthorne (1999). See also Maunu (2004b, esp. Sec. 2).

7 Leibniz seems to offer some analyses of statements like ‘Helen loves Paris’ by means of intensional (reduplicative) terms such as *eo ipso* and *quatenus*. (For instance, A VI, 4, 114 / P 14 (1678?): “Paris is the lover of Helen,” that is, “Paris loves, and by that very fact [et eo ipso] Helen is loved.” See also e.g. A VI, 4, 643 (1685?) and A VI, 4, 651-2 (1685-6?).) I have dealt with this issue (with many references to secondary literature) in Maunu (2004a, 151-4), suggesting that it is far from clear just what Leibniz is trying to do with such analyses.

8 Cf. here Jaakko Hintikka (1969, 263, 266): ‘what there is [about “reduction of relations” in Leibniz’s writings] seems to point less to a reduction proper of rela-

should emphasize that (even looking away from the compelling logical problem alluded to above) this acceptance of monadic ascriptions is not a mere *ad hoc* stipulation, but has some independent justification as an alternative that does not really threaten Leibniz's central self-sufficiency requirement. For instance, something like (or to the effect of) monadic ascriptions are needed also in any solution of *Leibniz's impossibility problem*, i.e. the problem of how independent (possible) substances can be impossible with each other.<sup>9</sup>

The following familiar passage in the Arnauld Correspondence gives some support to the claim that monadic ascriptions should be accepted as respecting self-sufficiency (LA 42, my emphasis; cf. LA 54):

When one considers in Adam a part of his predicates, for example, that he is the first man, set in a garden of pleasure, from whose side God fashioned a woman,

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tional *concepts* to non-relational ones than to an attempt to paraphrase relational *statements* (statements saying that a certain relation holds between two or more individuals) in terms of non-relational statements attributing complex predicates (possibly including relations) to these individuals. These predicates, as Mates [1968] rightly emphasizes, must not be defined in terms of the other individuals, for that would trivialize everything'; 'relational statements can be reduced to statements in each of which a complex predicate is ascribed to one and only one of the relata. These complex predicates may still involve relational concepts, although they do not refer to any particular individuals of the universe except the one to which they are attributed.' Cf. also Robert M. Adams's (1979) well-known characterizations of 'qualitative property' (or 'suchness'): A property is a suchness, according to a linguistic criterion provided Adams (1979, 7), if its expression is fully descriptive, without involving any particular individuals, or, more precisely, 'if and only if it could be expressed, in a language sufficiently rich, without the aid of such referential devices as proper names, proper adjectives and verbs (such as "Leibnizian" and "pegasizes"), indexical expressions, and referential uses of definite descriptions.' Adams (1979, 7-8) gives also a 'possibly more illuminating' explication of suchnesses as 'properties that are, in certain senses, general [...] and nonrelational,' or, more precisely, as 'logical or epistemic constructions' of *basic suchnesses*, with a basic suchness characterized as 'a property that satisfies the following three conditions. (1) It is not a thisness and not equivalent to one. (2) It is not a property of being related in one way or another to one or more particular individuals (or to their thisnesses). This is not to deny that some basic suchnesses are in a sense relational [... For example] the property of being a homeowner is a basic suchness, although relational, because having it does not depend on which particular home one owns. (3) A basic suchness is not a property of being identical with or related in one way or another to an extensionally defined set that has an individual among its members, or among its members' members, or among its members' members' members, etc.'

9 For this problem in Leibniz, see, for example, Russell (1937, 66-7), Rescher (1967, 77-8), Rescher (1979, 54-61), Rescher (1981), Hintikka (1969, 260-3), Wong (1980), G. Brown (1987), Rutherford (1995, 181-8), and Koistinen and Repo (1999).

and similar things conceived *sub ratione generalitatis*, in a general way (that is to say, *without naming Eve*, Paradise, and other circumstances that *fix individuality*), and when one calls Adam the person to whom these predicates are attributed, all this is not sufficient to determine the individual, for there can be an infinity of Adams, that is, an infinity of possible persons, different from one another, whom this fits.

On the basis of what Leibniz says here, let us compare 'Eve is fashioned from Adam's side' (or '*Fea*') to 'Someone is fashioned from Adam's side' (or ' $\exists xFxa$ '). The latter does not *name* any other 'thing,' and thus does not 'fix individuality,' and, accordingly, cannot be taken to be *about* any other *substance* — this is shown also by the fact that no answer can be given to the question, *About which substance apart from Adam is it?* 'Eve is fashioned from Adam's side,' on the other hand, is not about Adam only but is also about Eve (since Eve is 'named'), and Leibniz's famous (though somewhat problematic) view is that 'is one from whose side Eve is fashioned' can, strictly speaking, be true only of ('our') Adam (assuming that it in fact is true only of him) — this is just because 'naming Eve' (i.e. naming 'our Eve') fixes his individuality. In contrast, 'is one from whose side someone is fashioned' can be true of many substances, for no naming that fixes individuality is involved — this means, again, that 'Someone is fashioned from Adam's side' is *about* Adam only, i.e. is a monadic ascription, and, accordingly, 'is one from whose side someone is fashioned' may be regarded as (expressing) a self-sufficiency respecting denomination of Adam. In terms of individuation, there is a clear sense in which the entailment that there is some or other substance besides the one to be individuated does not threaten Leibniz's requirement of internal individuation in the manner a reference to a definite ('named') other substance does. For example, using 'loves Paris' in the identification of Helen is certainly not internal (self-sufficiency respecting), while 'loves somebody' might be taken to be so, or is, at any rate, less external; it does not fix the individuality of any substance in the manner 'loves Paris' does.<sup>10</sup>

In conclusion, we may (and need to) admit polyadic predicates (but only when they appear in monadic ascriptions). To anticipate the approach to be proposed below, in order to accommodate self-sufficiency and independence we need to represent (say) '*p*' in '*Lhp*' in a manner that essentially involves *h* alone, i.e., basically, we must find a way of dropping '*p*' from '*Lhp*' while somehow retaining the piece of information that *h* is related by *L* to *p*.

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10 For further defence of monadic ascriptions, see Maunu (2004a, Sec. 4).

### III Universal Expression

Even granting that denominations or predicates arising from monadic ascriptions (even those with polyadic predicates, such as  $\exists yLxy$ ) do not threaten self-sufficiency and thus are to be allowed as representations of what is *in* complete individual notions, our problem of how to 'derive the whole world' from complete individual notions is not over. The problem is, in a nutshell, how to capture, say, the particular connection between Helen and Paris, expressed in 'Helen loves Paris,' with monadic ascriptions alone, i.e. without utilizing polyadic ascriptions — that is, even if we have 'Helen loves' and 'Paris is loved' (i.e.  $\exists yLhy$  and  $\exists xLxp$ ) at our disposal, we cannot conclude that it is *Paris* (or, for that matter, any other particular person) whom Helen loves, nor that it is *Helen* who loves Paris.<sup>11</sup> As a crucial step for accommodating, by means of monadic ascriptions, these particular relations as 'results' or 'consequences,' I propose that we take the *whole world* into account at once. This manoeuvre is best explained in terms of a simple example: Let us consider a 'world' that is comprehensively (exhaustively) described by 'Helen is tall and loves both herself and Paris, who loves himself,' or formally:

(W)  $Th \& Lhh \& Lhp \& Lpp$ , or, for short,  $Shp$ .<sup>12</sup>

From this dyadic ascription, representing the 'whole positive truth' of our example world, we can derive the monadic ascriptions,

(WH)  $\exists y(Th \& Lhh \& Lhy \& Lyy)$ , or  $\exists yShy$

(or, 'Tall self-loving Helen loves a self-loving substance') and

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11 Cf. here Mugnai (1992, 101).

12 All the other 'facts' about Helen and Paris, e.g. Paris's not being tall, are to be understood as 'privations' and thus as (in a way) included in or implied by the given 'comprehensive' description. (Leibniz says, e.g. in LA 44, that it is sufficient to have in complete individual notions only *primitive* or *basic* notions, i.e. those which 'cannot be analysed into others' (A VI, 4, 528 / MP 7, 1683-5?), or to which a 'definition cannot be given' (M 35). In my examples below, I shall assume (or pretend) that the notions involved are primitive.)

Of course, what we have in W is really not what Leibniz has in mind when he talks about possible worlds or universes; for him worlds are immensely more complex in being composed of an infinite number of substances and in having a temporal and spatial structure (these structures themselves being just series of configurations of creatable substances). The purpose of the example W is illustration only.

(WP)  $\exists x(Tx \& Lxx \& Lxp \& Lpp)$ , or  $\exists xSxp$ <sup>13</sup>

(or, 'Self-loving Paris is loved by a tall self-loving substance'). My straightforward proposal is that we may take WH and WP as respective representations, with respect to the present example, of the complete individual notions of Helen and Paris, or, more properly, that we may take the predicates ' $\exists ySxy$ ' and ' $\exists xSxy$ ,' abstracted from WH and WP, respectively, as such respective representations.<sup>14</sup> It will be seen, to put it in rough intuitive terms, that the comparison between WH and WP reveals the one Helen loves (besides herself) to be in fact Paris, and, in general, that *Shp* is forthcoming from such a comparison.

Before going into the central question of how to 'deduce the whole world' from WH and WP, we must establish that complete individual notions *can* be represented by the predicates ' $\exists ySxy$ ' and ' $\exists xSxy$ ,' arising from WH and WP, respectively. This is because nothing can be a representation of a complete individual notion unless it *determines* (or *individuates*) a unique individual (substance) — cf., for instance, LA 54: 'what determines a certain Adam must absolutely contain all his predicates, and it is this complete notion that determines generality in such a way that the individual is reached' — and the predicates in question

13 What is employed in WH, WP, and the like is, in effect, a version of *Ramsification* (originally due to Ramsey 1929). There are well-known applications of Ramsification in the philosophy of science and philosophy of mind.

14 When Leibniz talks about inferring something from a complete individual notion of a substance, he must mean the inference of something from the 'whole truth' about that substance, given in acceptable intrinsic terms, or directly arising from its complete individual notion (for example, if the notion expressed in 'is tall' is in Helen's complete individual notion, the respective truth is expressed by 'Helen is tall'). WH and WP are, it will be argued, such representations of the whole ('positive') truth about Helen and Paris, respectively, given in terms that adequately respect the self-sufficiency of Helen and Paris.

It might be asked, Why not employ in WH and WP, instead of ' $\exists$ ,' the uniqueness quantifier ' $\exists!$ ' (defined by  $\exists!xFx \leftrightarrow \exists x(Fx \& \forall z(Fz \rightarrow z=x))$ )? My answer is that this would utilize identity in WH and WP, and from Leibniz's point of view this would be, arguably, improper, since identity and distinctness are nothing primitive for Leibniz but arise from purely qualitative properties of substances, on the basis of Leibniz's discernibility principles (cf. here Rescher 1979, 50-1). And, in any case, as we shall see, due to the comprehensiveness of W, the mere ' $\exists$ ' in WH and WP suffices for my purposes. It may be useful to have in view also the following alternative way of introducing my proposal: Since W is comprehensive, we may conclude from it that  $p = \text{the}(y)Shy$  (with obvious notation). Substituting ' $\text{the}(y)Shy$ ' for ' $p$ ' in W we have  $S(h, \text{the}(y)Shy)$  (which is a monadic ascription). Applying Russell's 'contextual analysis' of definite descriptions — according to which  $F(\text{the}(x)Gx)$  is just  $\exists x(Gx \& \forall z(Gz \rightarrow z=x) \& Fx)$  — to this latter, we obtain  $\exists!yShy$ , which is just the uniqueness version of WH.

may seem not to fulfill this requirement. That is, taking the entailment from  $\exists xFx$  (together with some acceptable further assumptions) to  $\exists!xFx$  (i.e. to  $\exists x(Fx \ \& \ \forall y(Fy \rightarrow y=x))$ ) to characterize the concept 'predicate "Fx" determines a unique substance,' it may seem that our ' $\exists ySxy$ ' and ' $\exists xSxy$ ' cannot be, after all, representations of complete individual notions. It is useful to consider first how the predicate ' $Sxp$ ,' arising directly from  $W$ , determines Helen (even without Leibniz's controversial view in LA 42, mentioned above, that naming Eve (i.e. 'our Eve,' not any of those 'other possible Eves') determines Adam (i.e. 'our Adam,' separating him from 'other possible Adams')). On Leibnizian principles, it seems easy enough to get from  $\exists xSxp$  to  $\exists!xSxp$ : Let ' $k$ ' and ' $m$ ' stand for (arbitrary) substances such that  $Skp$  and  $Smp$ . Then, since  $Sxy$  is comprehensive, it follows from Leibniz's *Principle of Identity of Indiscernibles* (IdI, for short) that  $k = m$ . Thus,  $\exists xSxp$ , taken together with the comprehensiveness and IdI, does entail  $\exists!xSxp$ , i.e. ' $Sxp$ ' determines a unique substance (and thus could represent a complete individual notion if it didn't contain an explicit reference to Paris).

Turning then to the critical 'determination problem' connected to WH (and, analogously, to WP), the difficulty is that the respective predicate, ' $\exists ySxy$ ,' even when taken together with IdI (and comprehensiveness), fails to determine a unique individual (substance), for IdI does not block the possibility of there being (at least) two pairs,  $\langle a,b \rangle$  and  $\langle c,d \rangle$  (with  $a \neq c$ ), of individuals (substances) such that both ' $Sab$ ' and ' $Scd$ ' are true — that is, even taking the comprehensiveness of  $Sxy$  into account and assuming IdI, ' $\exists xySxy$ ' may be true while ' $\exists!x\exists ySxy$ ' is false. However, IdI may very plausibly be expanded into the following *Generalized Principle of Identity of Indiscernibles* (GIIdI, for short): there are no two exactly similar *pairs* of substances. The Leibnizian justification, based on the Principle of Sufficient Reason, is the same for IdI and GIIdI: there is (or would be) 'no point' in creating two exactly similar substances (see, e.g., LC 5.21, 5.69), and there is no point in creating two exactly similar pairs (or triads, etc.) of substances either. Bearing still the comprehensiveness of  $Sxy$  in mind, GIIdI blocks the above-mentioned possibility of there being two  $S$ -related pairs  $\langle a,b \rangle$  and  $\langle c,d \rangle$  (where  $a \neq c$ ); thus, taken together with the comprehensiveness and GIIdI,  $\exists xySxy$  does entail  $\exists!x\exists ySxy$ , that is, ' $\exists ySxy$ ' determines a unique (possible) individual (substance)<sup>15</sup> and, accordingly, can be used as a representation of

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15 Leibniz's requirement that the complete individual notion of a substance must distinguish that substance from all other *possible* substances is also satisfied: bearing in mind that each possible substance is a part of, or embedded in, a world (considered *sub ratione possibilitatis*) and that there are no two exactly similar worlds, let us consider, for instance, the world  $Shp$  (i.e.  $W$  above) and another world which is like

a complete individual notion (since it also satisfies the self-sufficiency condition). Having thus established the uniqueness (determination) we may refer to (denote, pick out) Helen by '*the(x)∃ySxy*' and to Paris by '*the(y)∃xSxy*'; i.e. we get from the original dyadic '*Shp*' the monadic ascriptions '*S(the(x)∃ySxy,h)*' and '*S(p,the(y)∃xSxy)*'.

We are now, finally, in a position to show how to 'infer the whole world' from WH and WP. From the argument from  $\exists xSxp$  to  $\exists !xSxp$ , given above, we see that in our example we have  $\exists !xSxp$  and  $\exists !yShy$ . Letting then '*k*' and '*q*' stand for (unique) substances such that *Skp* and *Shq* (i.e., instantiating  $\exists !xSxp$  and  $\exists !yShy$ , respectively), it only remains to be shown that  $k = h$  and  $q = p$ . And this follows directly from GID: Since *Skp* and *Shq* hold and *Sxy* is comprehensive, if either  $k \neq h$  or  $q \neq p$  (or both) were the case, we would have two exactly similar pairs  $\langle k,p \rangle$  and  $\langle h,q \rangle$  in our hands (for the supposition that, say,  $k = h$  but  $q \neq p$  means that both *Shp* and *Shq* hold, i.e. that nothing separates the pair  $\langle h,p \rangle$  from the pair  $\langle h,q \rangle$  (since *Sxy* is comprehensive)); thus, by GID,  $k = h$  and  $q = p$ , which is what was to be demonstrated. In conclusion, WH and WP, taken together with GID and comprehensiveness, entail *Shp*.

In fact, what Leibniz customarily says is that each and every complete individual notion, even taken alone, is a universal expression, i.e. that 'the world' is deducible from any *single* complete individual notion,<sup>16</sup> which seems not to be satisfied by the construction just given. Now, it is clear that a given relational ascription '*Xhp*' just cannot be deduced from the complete individual notion of, say, *h* alone, or, more properly, solely from the whole truth about *h*, given in terms that respect self-sufficiency (for one cannot infer the truth of anything like '*Xhp*' without explicitly utilizing both '*h*' and '*p*' in the premises). However, we could say, about our example, that the *structure* of the whole world is displayed in both WH and WP and that in this structural sense the whole world is reflected in each and every single complete individual notion.

On the basis of the construction provided above, we can also give a simple but definite account of viewpoints or perspectives, i.e. of Leibniz's statements such as the following: '[the] expressions of all substances mutually correspond in such a way that each one ... coincides with others doing the same.... But although they express the same phenomena, it does not follow that their expressions are perfectly similar;

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*Shp*, except that Paris (or 'some other possible Paris') is tall as well, i.e. the world *Th & Tp & Lhh & Lhp & Lpp*, or *S\*hp* for short. Then, due to the comprehensiveness, it is obvious that the (possible) substance that is  $\exists ySxy$  is dissimilar to the one that is  $\exists yS^*xy$  (and the substance that is  $\exists xSxy$  is dissimilar to the one that is  $\exists xS^*xy$ ).

16 Cf. here Sleight (1990, 76-7).

it is sufficient that they are proportional' (DM 14). Namely, we see that the same structure of the whole world (or 'the same phenomena') is reflected from different ('proportional') viewpoints in WH and WP, or that ' $S(h, the(y)\exists xSxy)$ ' and ' $S(the(x)\exists ySxy, p)$ ' represent the whole truth from the point of view of Helen and Paris, respectively; or, perhaps more properly, we can say that the whole world is expressed, from different viewpoints, in the respective predicates ' $\exists ySxy$ ' and ' $\exists xSxy$ ,' or, by means of an alternative representation, in ' $S(x, the(y)\exists xSxy)$ ' and ' $S(the(x)\exists ySxy, y)$ .'

Though the approach illustrated above is, in its exactness, novel (as far as I know), it is not altogether without predecessors in the literature. Nicholas Rescher's (1979, 58-9) account may be seen to have some affinities to my approach, as well as the one, in some respects similar to that of Rescher's, in Rutherford (1995, 183-7). In fact, the approach above might be seen as a transparent and definite explication of what is, perhaps, aimed at in the following passage in Rutherford (1995, 185):

To say that Adam is the father of Cain is to say that Adam expresses himself as standing in a relation of fatherhood to someone with all those properties truly predicated of Cain *and* that Cain expresses himself as standing in a relation of filiation to someone with all those properties truly predicated of Adam.<sup>17</sup>

However, since Rescher and Rutherford do not provide us with sufficient amount of details of their respective accounts, I cannot decide whether they would accept the explicit theory given above. Moreover, in Rutherford's case at least, there is 'flight into intensionality':<sup>18</sup> 'the properties that ground the relatedness of Adam and Cain are internal to their respective souls: properties such as "expressing oneself to be the father of (an individual with all the properties of) Cain" and "expressing oneself to be the son (of an individual with all the properties) of Adam"' (Rutherford 1995, 184). My construction is more direct and transparent in managing without any such appeal to intensionality.

The framework illustrated above is in (rough) agreement with many undetailed characterizations of Leibniz's view to be found in the secondary literature. I mean statements related to denominations such as

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17 Cf. here also Strawson (1959, 128): 'the designation of the Caesar-concept will contain the phrase ... "and who was stabbed by a man who ..." (where the second "who" is followed by a Brutus-description).'

18 The prototype of this sort of move involving intensionality in recent Leibniz scholarship is, perhaps, Furth (1967, 172): 'the world of a monad is ... an "intentional" object of the monad's conscious or unconscious awareness.' See also, for instance, Adams (1994, 219f.).

the following: 'on any given occasion of the use of a relational proposition or extrinsic denomination there will be nonrelational propositions or intrinsic denominations, respectively, that imply it' (Mates 1986, 222); 'given the intrinsic properties of any two substances, it is fully determined how they are related' (Rutherford 1995, 184); 'if  $aRb$ , then this is something that can be deduced from an informational basis consisting of  $a$ 's identifying description and  $b$ 's identifying description' (Rescher 1981, 67); 'when you have said what there is to say about the distribution of intrinsic denominations among individual substances in a given world, you have said it all' (Sleigh 1990, 75);<sup>19</sup> 'all the information contained in [Leibniz's complete individual notion]  $C_L$  is derivable from the information contained in [Arnauld's complete individual notion]  $C_A$ ' (Sleigh 1990, 182). The present approach shows, in detail, how the world can be described, fully and exhaustively, by means of denominations arising from monadic ascriptions (e.g. 'is tall,' 'loves somebody'); whenever we state a truth involving an extrinsic denomination (e.g. 'Helen loves Paris'), we have, of the same truth, an alternative statement in terms of denominations arising from monadic ascriptions alone. This amounts to the universal expression of the world by notions that respect self-sufficiency.

#### IV Change

Leibniz states in numerous places his doctrine of *universal change*, namely, that each and every change in any substance is reflected as a real, internal change in each and every other substance as well (and thus represented in their complete individual notions, in terms that respect self-sufficiency).<sup>20</sup> While such a theory of universal change follows directly from that of universal expression (for any change in any substance is expressed in every other substance just because every substance is an expression of every other substance), what has impeded the full appreciation of the former has been, I suggest, the lack of transparent explication of the latter.

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19 Sleigh (1990, 75) identifies intrinsic denominations with Adams's (1979) 'suchnesses' (see n. 8 above). Since predicates arising from monadic ascriptions express such suchnesses, Sleigh seems to be even more in agreement with my account than Mates *et al.*

20 For Leibniz's views about change, see, for instance, A VI, 3, 523 / DSR 83-5 (1676); A VI, 4, 308n (1679?); A VI, 4, 1503 / L 365 (1683-6?); DM 15; LA 112-3; A VI, 4, 996 (1688?); A VI, 4, 944 (1688-90?); A VI, 4, 1645-7 / AG 32-3 (1689?); A VI, 4, 1668 / AG 103 (1690); C 9 / MP 133 (c. 1696); G2 252 / AG 177 (1703); NE 2.25.5 (A VI, 6, 227); LH 4.8 61r (1715-6), LH 4.3.5c 2r.

In order to illustrate how the present approach deals with the thesis of universal change, let us develop our example by assuming that Paris grows tall, i.e. that *Shp* becomes  $S^*hp$ , or  $Th \ \& \ Tp \ \& \ Lhh \ \& \ Lhp \ \& \ Lpp$ . The change in Paris is, obviously, accounted for by saying just that Paris is at first non-tall (i.e. lacks tallness) and then tall, or, more properly (from the standpoint of the present approach), that Paris turns from being  $the(y)\exists xSxy$  into being  $the(y)\exists xS^*xy$ . The familiar puzzlement in Leibniz's view, why this apparently wholly internal change in Paris should concern Helen at all, receives now a candid and most natural solution: the real, internal change in Helen, 'proportionate' to that in Paris,<sup>21</sup> is just her being at first  $the(x)\exists ySxy$  and then being  $the(x)\exists yS^*xy$ .<sup>22</sup>

## V Objections

Whenever a definite account or interpretation of some of Leibniz's views is offered, several objections are bound to arise in the mind of the reader. Starting with a couple of apparent difficulties related to infinity, it may be pointed out, first, that according to Leibniz's *analysis account of modalities* a sentence expresses a necessary truth just in case it is finitely resolvable (analyzable) into an identity;<sup>23</sup> now, we can deduce from WH & WP & GIdI (for example) ' $T(the(x)\exists ySxy)$ ,' or 'Tallness belongs to the substance that is tall and self-loving and loves a self-loving substance' (i.e., in short, 'Helen is tall') — this resolves immediately into an identity, which makes it, objectionably, to appear as a necessary truth. Fortunately, this can be replied to without going into the depths of Leibniz's theory of infinite analysis: the simple reply to this objection is that my illustration W is far too simple — it contains only two substances and, even more importantly, that illustration overlooks the worldly circumstances of time and place (i.e. certain series of configurations of substances), which give rise to 'infinity of reasons,' which, in turn, is for Leibniz 'responsible' for contingency.<sup>24</sup>

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21 Cf. LA 112, quoted in n. 1 above.

22 See here also Maunu (2004b, esp. Sec. 4).

23 For Leibniz's general account of such resolution, see, for instance, A VI, 4, 805 / L 226 (1686-7?).

24 For infinite analysis, see, for example, A VI, 4, 1516-9 / MP 97-100 (1685-6?); GI 56-7, GI 61-6, GI 74, GI 130-6; A VI, 4, 862 (1687-96?); A VI, 4, 912 / Schr 13 (1688?); A VI, 4, 1616-7 / MP 75-7 (1688?); A VI, 4, 1649-51 / AG 28-9 (1689?); A VI, 4, 1654-9 / AG 95-8 (1689?); A VI, 4, 1661-3 / AG 98-100 (1689?); T k14; M 33, M 36-7; G3 582 / L 664 (1715). For 'infinity of reasons' and 'worldly circumstances,' see also A VI, 4, 1441 (1679); A VI, 4, 1793 (1685-1716?); LA 49; NE 3.3.6 (A VI, 6, 289-90); LC 5.66.

A second, related potential objection involving infinity is just that the account provided above is in terms of two substances only, while in Leibniz's view there are infinitely many substances in every possible world.<sup>25</sup> My reply to this objection is that even though the number of substances' being infinite may create (at least technical) problems, the objective in this paper has been only to give a simple but definite idea of how the complete individual notion of a substance 'involves' all other substances under the constraint that substances are self-sufficient and internally individuated.

Another possible objection concerns the notions of self-sufficiency and independence. Notwithstanding my giving in Section II some justifications for the claim that monadic ascriptions adequately respect (or, at least, do not seriously threaten) self-sufficiency, independence and internal individuation, it might be insisted that monadic ascriptions do not really do so. In particular, it may be objected that (at least some) monadic ascriptions with polyadic predicates do not involve merely intrinsic denominations since they represent the substance to which something is ascribed as dependent on others, or at least as dependent on the *existence* of others.<sup>26</sup> As a brief reply to this objection, I submit that the dependence alluded to is not of the sort that threatens Leibniz's view of the independence of a substance, which view is really better characterized by 'self-sufficiency' (or 'self-containedness' or 'self-sustenance') than by 'independence.' For one thing, Leibniz is surely talking about *causal*, and not *logical* independence between substances.<sup>27</sup> A substance's expressing all others means that it is logically dependent on them; but it is, *precisely due to* this universal expression — and this is Leibniz's way of emphasizing self-sufficiency — as if a 'world apart,' or like a 'multiplication of the world,' or a 'concentrated world' (cf. Section I above). Indeed, Leibniz sometimes offers universal expression as a *justification* for why we do not need to suppose 'influence' between substances (e.g. in A VI, 4, 1647 / AG 33 (1689?); LC 5.91; G2 518-9 / AG 204 (1716)). As for the specific question, whether a substance's expressing all others entails that these others exist, Leibniz almost always

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25 Or, at least, this appears to be the received view. It is argued by G. Brown (1987, 267-8), with some persuasiveness, that there is 'no reason why Leibniz should have maintained that every possible world must contain an infinity of complete individual concepts' (*ibid.*, 268).

26 Obviously, this question of whether existences are implied is highly relevant to the 'flight into intensionality' issue mentioned above.

27 This point is made, specifically in relation to the present issue, by Hintikka (1969, 270-1), D'Agostino (1976, 99), and Burdick (1991, 4-6), among others.

implies that it does.<sup>28</sup> he states, repeatedly, that everything in the world would be different if anything were otherwise than it actually is.<sup>29</sup> Thus, if we ask, Could Helen be as she is even if Paris did not exist?, Leibniz's reply is, it seems clear, that she could not;<sup>30</sup> if this implies, as it certainly seems to do, that for Leibniz substances are in a sense dependent on (the existence of) others, then we must conclude that Leibniz accepts such dependency.<sup>31</sup> (In any case, I repeat, substances are self-sufficient.)

Finally, it may be pointed out that my approach to universal expression fails to account for Leibniz's view that the mind (or dominant monad) expresses its body (or aggregate of subordinate monads) and thereby expresses (or *perceives*), via its body, the whole world, as well as his (related) talk of expressions' (or perceptions') being more or less *confused*.<sup>32</sup> My excuse is that I have deliberately omitted this 'physical' part of Leibniz's view, for it has intricacies and controversies of its own, and, further, since 'everything happens in the soul as if there were no body' (G4 560 / WF 113, 1702), one can, as it were, bracket 'bodily issues' in considering Leibniz's views (by which I do not mean that such issues are insignificant, only that Leibniz's views can be dealt with *as if* there were no bodies). I have also looked away from the central aspect in Leibniz's thought related to the 'active force' of substances (involving 'appetites,' 'striving,' etc.). While not advocating the doctrine — standardly associated with Louis Couturat and Bertrand Russell — that 'Leibniz's metaphysics follows from his logic,' I am convinced that it is useful to have an explicit and definite 'formal' framework for Leibniz's

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28 For an opposing view, based on certain (apparently) aberrant passages in Leibniz — e.g. G4 519 / WF 81 (1698), G4 530 / WF 76 (1705?), G2 496 / L 611 (1715) — see Cover and O'Leary-Hawthorne (1999, 75-6, 100-2).

29 See, for instance, DM 30; LA 42, LA 52-3; A VI, 4, 1639 (1689-90?); Gr 358 (1695); G2 226 / L 524-5 (1701); G2 451 / L 605 (1712); T 9, T 414-6.

30 Rescher (1979, 50, 59) and Mates (1986, 76-7, 192, 221), for instance, also hold that this is Leibniz's view.

31 Also, Leibniz's definition of expression — see n. 1 above — seems to entail that there can be expression only when there is something to be expressed: if Paris did not exist, Helen would not express him because a nonexistent, not being anything, cannot be in a 'constant and fixed relationship' with anything. (This point, with the same justification, has been made also by Ishiguro (1972, 210-12; 1990, 150-1).)

32 For 'perception via a body' and confused perceptions, see, for instance, DM 33, LA 90-1, LA 112; A VI, 4, 1668 / AG 103 (1690); C 12-6 / MP 173-8 (c. 1712); M 60-2; PNG 3. It may be that some resort to intensionality is called for in the complete explanation of Leibniz's account of these issues (e.g., the view that the mind has its body as an intentional object). See, for instance, Adams (1994, esp. 285-91) and Look (2002).

fundamental thesis of universal expression, which is what has been attempted above.<sup>33</sup>

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## References

### *Leibniz's writings*

- (A) *Sämtliche Schriften und Briefe* (Reihe 1-8), hrsg. Berlin-Brandenburgischen Akademie der Wissenschaften et al. Berlin et al.: Akademie Verlag et al., 1923f. Cited by series, volume and page (e.g. 'A VI, 4, 308' refers to series VI, volume 4, page 308).
- (AG) *Philosophical Essays*, ed. and trans. R. Ariew and D. Garber. Indianapolis: Hackett 1989.
- (C) *Opuscules et fragments inédits de Leibniz*, ed. L. Couturat. Paris: Alcan 1903.
- (DM) *Discours de métaphysique* (1686), A VI, 4, 1529-88 / AG 35-68. Cited by section number.
- (DSR) *De Summa Rerum: Metaphysical Papers 1675-1676*, ed. and trans. G.H.R. Parkinson. New Haven: Yale University Press 1992. (Latin original (from A VI, 3, 391-7, 399-400, 461-84, 490-1, 504-28, 572-88) and English translation on facing pages.)
- (G) *Die philosophischen Schriften von Gottfried Wilhelm Leibniz* (Bände 1-7), hrsg. C. I. Gerhardt. Berlin: Weidmann, 1875-90. Reprinted, Hildesheim: Olms, 1960-1. Cited by volume and page (e.g. 'G2 249' refers to volume 2, page 249).
- (GI) *Generales inquisitiones de analysi notionum et veritatum* (1686), A VI, 4, 739-88 / P 47-87. Cited by section number.
- (Gr) *Textes inédits d'après les manuscrits de la bibliothèque provinciale de Hanovre*, ed. G. Grua. Paris: Presses Universitaires de France 1948.
- (H) *Theodicy: Essays on the Goodness of God, the Freedom of Man and the Origin of Evil*, ed. A. Farrar, trans. E.M. Huggard. La Salle: Open Court 1985.
- (L) *Philosophical Papers and Letters* (Second Edition), ed. and trans. L. Loemker. Dordrecht: Reidel 1969.
- (LA) The Leibniz-Arnould Correspondence (1686-91), G2 11-138 / AG 69-90 (in part) & LAM. Cited by page number in G2 (given marginally in LAM).

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- (LAM) *The Leibniz-Arnauld Correspondence*, ed. and trans. H. T. Mason. Manchester: Manchester University Press 1967.
- (LC) The Leibniz-Clarke Correspondence (1715-6), G7 345-440 / AG 320-46 (in part) & L 675-717. Cited by letter and section number.
- (LH) The Leibniz Manuscripts in Niedersächsische Landesbibliothek, Hanover, cited by Bodemann's numbering (as given in *Die Leibniz-Handschriften der Königlichen öffentlichen Bibliothek zu Hannover*, hrsg. E. Bodemann; Hannover 1889; reprinted, Hildesheim: Olms 1966) and page. References to LH 4.3.5c 2r and LH 4.8 61r are to texts printed in Mugnai (1992, pp. 26 (n. 47) and 158, respectively).
- (M) *Monadologie* (1714), G6 607-23 / AG 213-25. Cited by section number.
- (MP) *Philosophical Writings*, ed. G.H.R. Parkinson, trans. M. Morris and G.H.R. Parkinson. London: Dent 1973.
- (NE) *Nouveaux essais sur l'entendement humain* (c. 1704), A VI, 6, 43-527 / NERB. Cited by section number and parenthetically by page number in A VI, 6, (given marginally in NERB).
- (NERB) *New Essays on Human Understanding*, ed. and trans. P. Remnant and J. Bennett. Cambridge: Cambridge University Press 1981.
- (P) *Logical Papers: A Selection*, ed. and trans. G.H.R. Parkinson. Oxford: Clarendon 1966.
- (PNG) *Principes de la Nature et de la Grace, fondés en raison* (1714), G6 598-606 / AG 207-13. Cited by section number.
- (Schr) *Monadology and Other Philosophical Essays*, ed. and trans. P. Schrecker and A. M. Schrecker. Indianapolis: Bobbs-Merrill 1965.
- (SN) *Système nouveau de la nature et de la communication des substances ...* (1695), G4 477-87 / AG 138-45. Cited by paragraph number.
- (T) *Essais de Théodicée sur la bonté de Dieu, la liberté de l'homme et l'origine du mal* (1710), G6 21-462 / H. Cited by section number (in the main essays), with the abbreviation: k = *Remarques sur le Livre de l'origine du mal ...* (E.g. 'T 291' refers to Section 291 of the main essays and 'T k14' to Section 14 of the *Remarques*.)
- (WF) *Leibniz's 'New System' and Associated Contemporary Texts*, ed. and trans. R. S. Woolhouse and R. Francks. Oxford: Clarendon 1997.

### Other sources

- Adams, R.M. 1979. 'Primitive Thisness and Primitive Identity.' *Journal of Philosophy* 76: 5-26.
- \_\_\_\_\_. 1994. *Leibniz: Determinist, Theist, Idealist*. Oxford: Oxford University Press.
- Bennett, J. 2001. *Learning from Six Philosophers: Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume*, Vol. 1. Oxford: Oxford University Press.
- Broad, C.D. 1950. *Leibniz: An Introduction*, ed. C. Lewy. Cambridge: Cambridge University Press 1975.

- Brown, C. 1990. *Leibniz and Strawson: A New Essay in Descriptive Metaphysics*. Munich: Philosophia Verlag.
- Brown, G. 1987. 'Compossibility, Harmony, and Perfection in Leibniz.' *Philosophical Review* 96: 173-203. Reprinted and cited from *Gottfried Wilhelm Leibniz: Critical Assessments*, Vol. 2, ed. R. S. Woolhouse. London: Routledge 1994, 261-87.
- Burdick, H. 1991. 'What Was Leibniz's Problem about Relations?' *Synthese* 88: 1-13.
- Cover, J.A., and O'Leary-Hawthorne, J. 1999. *Substance and Individuation in Leibniz: An Essay in Metaphysics*. Cambridge: Cambridge University Press.
- D'Agostino, F.B. 1976. 'Leibniz on Compossibility and Relational Predicates.' *Philosophical Quarterly* 26: 125-38. Reprinted and cited from *Leibniz: Metaphysics and Philosophy of Science*, ed. R. S. Woolhouse. Oxford: Oxford University Press 1981, 89-103.
- Furth, M. 1967. 'Monadology.' *Philosophical Review* 76: 169-200.
- Hintikka, J. 1969. 'Leibniz on Plenitude, Relations, and the 'Reign of Law.''' *Ajatus* 31: 117-44. Reprinted (in a slightly revised form) and cited from *Reforging the Great Chain of Being: Studies of the History of Modal Theories*, ed. S. Knuutila. Dordrecht: Reidel 1981, 259-86.
- Ishiguro, H. 1972. 'Leibniz's Theory of the Ideality of Relations.' In *Leibniz: A Collection of Critical Essays*, ed. H.G. Frankfurt. Notre Dame: University of Notre Dame Press, 191-213.
- \_\_\_\_\_. 1990. *Leibniz's Philosophy of Logic and Language*, Second Edition. Cambridge: Cambridge University Press. (First edition: 1972.)
- Koistinen, O., and Repo, A. 1999. 'Compossibility and Being in the Same World in Leibniz's Metaphysics.' *Studia Leibnitiana* 31: 196-214.
- Kulstad, M. A. 1977. 'Leibniz's Conception of Expression.' *Studia Leibnitiana* 9: 55-76.
- \_\_\_\_\_. 1980. 'A Closer Look at Leibniz's Alleged Reduction of Relations.' *Southern Journal of Philosophy* 18: 417-32. Reprinted and cited from *Gottfried Wilhelm Leibniz: Critical Assessments*, Vol. 2, ed. R.S. Woolhouse. London: Routledge 1994, 213-30.
- Look, B. 2002. 'On Monadic Domination in Leibniz's Metaphysics.' *British Journal for the History of Philosophy* 10: 379-99.
- Mates, B. 1968. 'Leibniz on Possible Worlds.' In *Logic, Methodology, and Philosophy of Science III*, ed. B. van Rootselaar and J.F. Staal. Amsterdam: North-Holland, 507-29. Reprinted and cited from *Leibniz: A Collection of Critical Essays*, ed. H.G. Frankfurt. Notre Dame: University of Notre Dame Press 1972, 335-64.
- \_\_\_\_\_. 1986. *The Philosophy of Leibniz: Metaphysics and Language*. Oxford: Oxford University Press.
- Maunu, A. 2004a. 'Leibnizian Soft Reduction of Extrinsic Denominations and Relations.' *Synthese* 139: 143-64.
- \_\_\_\_\_. 2004b. 'Extrinsic Denominations and Universal Expression in Leibniz.' *Dialogue: Canadian Philosophical Review* 43: 83-97.
- Mugnai, M. 1992. *Leibniz' Theory of Relations*. Stuttgart: Steiner. (= *Studia Leibnitiana*, Supp. 28.)
- Parkinson, G.H.R. 1965. *Logic and Reality in Leibniz's Metaphysics*. Oxford: Clarendon.

- Ramsey, F.P. 1929. 'Theories.' In Ramsey, F.P., 1990, *Philosophical Papers*, ed. D.H. Mellor. Cambridge: Cambridge University Press, 112-36.
- Rescher, N. 1967. *The Philosophy of Leibniz*. Englewood Cliffs: Prentice-Hall.
- \_\_\_\_\_. 1979. *Leibniz: An Introduction to His Philosophy*. Oxford: Blackwell.
- \_\_\_\_\_. 1981. 'Leibniz on Intermonadic Relations.' In *Truth, Knowledge and Reality: Inquiries into the Foundations of Seventeenth-Century Rationalism*, ed. G.H.R. Parkinson. Wiesbaden: Steiner. (= *Studia Leibnitiana*, Sonderheft 9.) Reprinted and cited from Rescher, N., 1981, *Leibniz's Metaphysics of Nature: A Group of Essays*. Dordrecht: Reidel, 56-83.
- Russell, B. 1937. *A Critical Exposition of the Philosophy of Leibniz*, Second Edition. London: Routledge 1992. (First edition: 1900.)
- Rutherford, D. P. 1995. *Leibniz and the Rational Order of Nature*. Cambridge: Cambridge University Press.
- Sleigh, R. C. 1990. *Leibniz and Arnauld: A Commentary on Their Correspondence*. New Haven: Yale University Press.
- Strawson, P.F. 1959. *Individuals: An Essay in Descriptive Metaphysics*. London: Methuen.
- Wong, D. 1980. 'Leibniz's Theory of Relations.' *Philosophical Review* 89: 241-56.

