

Collective nouns

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March 2018

This is the most recent draft of a chapter written for the upcoming Oxford Handbook of Grammatical Number, edited by Patricia Cabredo Hofherr and Jenny Doetjes. Comments: hanna.devries@york.ac.uk

1 Introduction

As David Gil notes with a certain exasperation in a 1996 paper, the word ‘collective’ is used in so many ways in different subfields of linguistics that finding one’s way through the forest of implicit and explicit definitions can be a daunting task. The different ‘uses and abuses’ (Gil, p.69) roughly fall into three categories. One treats the ‘collective’ as a particular morphosyntactic *form* - usually a type of number feature that languages like Welsh, Maltese and Arabic possess in addition to singular and plural (see **chapter on singulatives, this volume**). The second, which will probably be most familiar to semanticists, treats ‘collective’ as a type of *meaning* in which a certain property is predicated of a plurality as a whole and not its individual members. The third approach, which is the one we will center in this chapter, sees collectivity as a property of *form-meaning pairs*: a ‘collective noun’ is a noun which has a singular form, but (at least on the surface of it) plural reference. Such nouns include:

- (1) a. General ‘collection nouns’: *collection, set, group, multitude*
- b. Nouns denoting multitudes of humans or animals: *crowd, herd, swarm*
- c. Nouns denoting particular spatial configurations of multiple objects: *stack,*

pile, heap, bunch

- d. Nouns denoting institutions or groups of humans formed for some official purpose: *committee, council, team, army*

From the point of view of linguists interested in the grammar of number, collective nouns such as these are particularly interesting because they behave like singulars in some respects, but like plurals in others. For example, unlike other singular NPs but like plural NPs, they are grammatical with collective predicates (in the second sense of the word) like *meet, gather* and *disperse* (2). Like bare plurals, indefinite singular group nouns can themselves serve as nominal predicates over plural subjects ((3-b), (4)); in contrast, other singular indefinites are generally unable to do this.¹

- (2) a. The [boys/*boy] gathered.²
b. The committee gathered.
- (3) a. *The boy is a good team.
b. The boys are a good team.
- (4) a. John and Mary are a couple.
b. *John and Mary are a dentist.
c. John and Mary are dentists.

They also show mixed behaviour with respect to the number properties they trigger in agreeing and anaphoric expressions. While they always occur with a singular determiner (5), in some languages (probably most famously, British English) animate collective NPs

¹Jenny Doetjes (p.c.) and an anonymous reviewer point out another category of singular indefinite predicates that may be applied to plural subjects: abstract properties like *nuisance, problem, or delight* (e.g. *John and Mary are a delight*). Unlike e.g. being a dentist, which is a property of single individuals, these predicates express properties that may hold of singular and plural individuals alike. Thus, *John and Mary are a delight* is OK because it is possible to be collectively delightful, but (4-b) is out because multiple people cannot be a dentist together. The same collectivity requirement on the subject plurality applies, of course, to predicatively used collective nouns: (3-b), for example, means that the boys are a good team together, not individually.

²To avoid getting sidetracked by questions about the syntactic, semantic or pragmatic origin of certain unacceptabilities, I will use ‘*’ for all forms of unacceptable language, unless otherwise specified.

may³ take a plural VP (6-a) and are compatible with overt distributive and reciprocal quantifiers ((6-b),(6-c)), although such constructions are ungrammatical in other varieties of English and other languages such as Dutch (7). In all varieties of English, animate collectives support both discourse and bound plural anaphora ((6-b), (8)).

- (5) [This/*These] committee gathered.
- (6) a. The committee are in a meeting.
 b. A couple love each other, but they aren't happy. (BNC)⁴
 c. The couple each have a child from respective previous marriages. (BNC)
- (7) Mijn familie haat/*haten elkaar. (Dutch)
 my family hate-SG/hate-PL each-other
 'My family hate(s) each other.'
- (8) a. The group makes their way down a damp cobblestone street.⁵ (COCA)
 b. So if a team finds themselves at risk they can pick up a radio and the cavalry can come to the rescue. (COCA)

Because of these mismatches between morphosyntax and semantics, the behaviour of collective nouns provides a wealth of data for researchers interested in the relation between morphosyntactic and semantic number, as well as the connection between number and conceptual factors such as individuation.

³Preference for singular or plural agreement varies depending on the noun; see section 4 for details.

⁴BNC: British National Corpus, COCA: Corpus of Contemporary American English. All other examples are my own, unless otherwise specified.

⁵An anonymous reviewer points out that *they/their/themselves* is not necessarily plural anaphora, as it has a singular gender-neutral use too (cf. *Everybody made their way down a damp cobblestone street*). I am inclined to disagree, since singular gendered pronouns are clearly ungrammatical with collective subjects even if they match the established gender of the group members (contrast **The group of men/women made his/her way down* with the grammatical *Everybody made his/her way down*). But note that the overarching point stands regardless: since the use of singular *they* is limited to human individuals, its putative availability in sentences like (8) would indicate that a collective NP like *group* or *team* makes those individual humans grammatically accessible.

2 Definitions

2.1 Conceptual definitions

As we have seen (and will see in more detail later), it is possible to identify collectives as a separate class of nouns based on their grammatical behaviour. And indeed many linguists, especially those working on English, are happy to define the class of collective nouns as just those nouns that, in the singular, are compatible with plural agreement in British English (as in (6a)), and leave it at that [see Joosten, 2010, p32]. However, this does not in itself explain why these nouns form a separate class. Our working definition of ‘collective nouns’ - singular forms characterised by plural reference - suggests an intuitive answer by expressing the idea that these nouns are somehow simultaneously ‘one’ and ‘many’, but it also raises a lot of new questions because it relies on a notion of ‘plural reference’ that lacks a clear definition. Most entities in the world have parts of some sort; when are the parts salient enough for the entity to count as ‘plural’? Does *jigsaw puzzle* refer to a plurality of puzzle pieces, or *library* to a plurality of books? Is the difference between the nouns in (1) and an intuitively non-collective noun like *cat* a qualitative or merely a quantitative one? Many researchers have attempted to fine-tune the conceptual definition in order to answer questions such as these. A recurring theme to the approaches discussed here is that they all seem to deal with the tension between two particular intuitions: on the one hand, that the ‘parts’ of a collection are separate individuals with an existence independent of the ‘whole’, and on the other hand, that the whole is also an entity in itself, to an extent independent from its parts.

2.1.1 Independence of the parts

An important and very general distinction between a conceptual definition and a grammatical definition based on the availability of plural agreement is that the latter, as a side effect, limits the class of collectives to just animate (in particular human) nouns, while the former potentially classifies a much wider range of nouns as collective. However, Persson [1989] argues that animacy is crucial precisely because it is related to the parts’ ability to have agency independently from the whole (in Persson’s words: they are

‘self-propelled entities’). In addition, he identifies ‘degrees of collectivity’ based on whether the constituent parts of a collection are ‘volitional’ and ‘mobile’, which captures the extent to which being and remaining part of a certain collection is optional for the members. For example, the members of a club or committee generally choose to be part of their collection and are also free to leave it, while the same does not hold for the trees in a forest or the books in a library. Animacy is also considered a defining criterion by de Vries [2015], who speculates [following Corbett, 2000] that animacy is important because a high degree of animacy also means a high degree of individuation: in a highly individuated collection, the parts are perceived as distinct, non-interchangeable individuals. Individuation is cross-linguistically related to the morphosyntactic expression of plural number [Corbett, 2000]; according to De Vries, the highly individuated nature of animate collective nouns underlies their ‘plural’ behaviour. A similar point is made by Henderson [2016], who adopts Barker’s grammatical definition (section 2.2), but proposes that the class of collective nouns should be further subdivided into ‘group nouns’ (e.g. *committee*, *family*) and ‘swarm nouns’ (e.g. *grove*, *horde*) based on individuation-related conceptual criteria such as collection size and spatiotemporal proximity; he shows that the former are fine in contexts such as (2)-(8), while the latter are often ungrammatical.⁶

2.1.2 Independence of the whole

Another characteristic that distinguishes collective nouns from plurals and mass nouns is that the collections they refer to are more than the sum of their parts. A team is not just a collection of team members; it’s an entity in itself, with its own internal structure, its own complex way of functioning and its own independent goals. Gil [1996] calls this *non-additivity*. The ‘Gestalt’ nature of collective nouns is also emphasised by Joosten [2010], who uses this observation (along with several other criteria) in order to argue that ‘aggregates’ such as *furniture*, *silverware* and *cattle* are not collective nouns, but should be counted as a separate class (more on aggregates in section 2.3). It is also related to Barker’s (1992) discussion of the lack of ‘predicate sharing’ between plural and collective

⁶For a very similar subdivision based on grammatical criteria, see Pearson’s (2011) distinction between ‘committee nouns’ and ‘collection nouns’ (section 2.2).

NPs (see section 3), Pearson’s (2011) distinction between intensions and extensions of groups, and Kratzer’s (2001) notion of ‘grouping states’ (see section 3.2).

2.2 Grammatical definitions

According to what Joosten [2010] describes as the ‘Anglo-Saxon tradition’ – mostly traditional grammarians writing in and about English – collective nouns are characterised by their ability to take either a plural VP or, somewhat more broadly, license plural anaphora [e.g. Quirk et al., 1985, Levin, 2001]. In effect, this definition limits the class of collective nouns to just animate nouns in a very limited number of languages. In formal semantics, several other grammatical definitions and tests have been proposed that are (somewhat) less dependent on the particularities of English, starting with Barker [1992]; under most of these definitions, inanimates like *bunch* and *heap* also count as (a subclass of) collective. Barker defines collective nouns⁷ as those nouns that are compatible with plural, but not singular *of*-phrases. Thus, the nouns in (8) all count as collective but the nouns in (9) do not:

- (9) a. A [committee/group/jury/team] of [women / *a woman]
b. A grove of [pine trees / *a pine tree]
c. A stack of [plates / *a plate]
- (10) a. A picture of [horses / a horse]
b. A tale of [two cities / bravery]

The definition reflects Barker’s conception of collective nouns as ‘measure nouns in the count domain’: on his view, an NP like *a committee of women* should be analysed on a par with e.g. *a yard of fabric*, with the difference that collective nouns ‘measure out’ countable entities that remain (somewhat) accessible to the grammar. It is not entirely clear how

⁷In the formal semantic literature, collective nouns are often called ‘group nouns’ following Landman’s seminal 1989 paper, but I will keep using the term ‘collective’ here for the sake of consistency. Note that the term ‘group noun’ is sometimes used in a sense distinct from ‘collective noun’; Jackendoff [1977] uses the former to refer to nouns like *set*, *group*, and *stack*, which do not specify the kind of individuals they are collections of, and the latter for nouns like *army*, *herd*, and *forest*, which do.

Barker classifies nouns like *heap* and *bunch* that measure in both the count and mass domains (*a heap of apples / sand*), or container nouns like *room*, as in *a room of [women / *a woman]*).

Champollion [2010], however, argues that the category of ‘collective noun’ should be distinct from both container and measure nouns. He supplements Barker’s definition with a semantic criterion in order to rule out the latter categories: if ‘an *X* of *Y*s’ does not imply the presence of an *X*, *X* does not count as a collective noun. From *I met a committee of women* it follows that I met a committee, but from *I argued with a room of women* it does not follow that I argued with a room. This criterion is a bit unclear when it comes to the classification of nouns like *stack* and *heap*, since they have no existence independent from the stuff they consist of (does it follow from *I ate a heap of apples* that I ate a heap?). Champollion notes that this lack of clarity may serve to distinguish different subclasses of collective noun from each other, as the nouns whose collective status is dubious based on his criterion also surface as a distinct class of nouns in the (otherwise quite different) framework proposed by Pearson [2011]. Based on several tests, Pearson distinguishes two classes of collective nouns: ‘collection nouns’ such as *stack*, *heap*, *bunch*, *bouquet*, and *collection*, and ‘committee nouns’ such as *committee*, *family*, and *team*. She argues that the semantics of the latter have an intensional component that the former lack, which accounts for their distinct behaviour in her various tests (more on this in section 3.2).

2.3 Borderline cases

2.3.1 Non-count ‘collectives’

So far, all the collective nouns we have looked at have been count nouns. While many of the approaches above are limited to count nouns by definition or corollary (such as Barker’s, whose definition relies on a syntactic construction that is unavailable with non-count nouns, as well as conceptual approaches such as Joosten’s which emphasise the ‘one-ness’ or non-additivity of the collections that collective nouns range over), others (such as the working definition we adapted at the beginning of this chapter) leave room for a category of ‘collective mass nouns’. Nouns such as *police*, *clergy*, *aristocracy*, *personnel*,

cattle, and *offspring* closely resemble some of the collective nouns mentioned in the previous sections (for example, in their ability to take plural agreement in certain varieties of English), while also showing grammatical behaviour characteristic of mass nouns (see **chapter on mass/count distinction**, this volume). For instance, they are incompatible with pluralisation and the indefinite determiner ((11-a)/(12-a)), grammatical in classifier constructions ((11-b)/(12-b)), and can be used in argument positions in their bare form ((11-c),(12-c)).

- (11) a. *Two hundred rices, *one furniture, *two jewelries, *a sand
 b. Two buckets of water, several drawers of silverware
 c. I bought rice/furniture/*bucket.
- (12) a. *Various personnels, *three clergies, *a cattle
 b. Three squadrons of police, multiple levels of clergy, a generation of offspring
 c. I was escorted off the premises by military/*security unit.

The properties exemplified in (11) and (12) hold of plural count nouns as well, and it is sometimes claimed that nouns like *clergy* and *police* are lexical plurals (Huddleston and Pullum 2002, p354, Gardelle 2018 and **author of chapter 12 on lexical plurals**, this volume). This claim is supported by the fact that, unlike mass nouns, they usually take plural agreement and trigger plural anaphora, and are compatible with numerical determiners and plural count determiners such as *many*, *few*, and *several*.⁸

- (13) My father, on the other hand, had loathed him and made no secret of it, so the police convinced themselves that he'd ordered a contract killing[.] (COCA)
- (14) a. The root of the East German church's involvement lies in the agonising sense of guilt and self-accusation among many clergy during and after the Second World War for not having spoken out against the Nazis in time. (BNC)
 b. He further announced on Jan. 29, 1990, that 2,750 military and civilian personnel (including their dependants) would be withdrawn from a number of

⁸The examples are from the BNC, but this holds even, to an extent, in American English: an anonymous reviewer notes that *police* overwhelmingly agrees in the plural in American English as well.

bases in the United Kingdom and elsewhere[.]

(BNC)

Acquaviva [2008], however, argues against analysing nouns like *police* as simply unmarked plural count nouns; he notes that constructions such as (14b) are only licensed with high numbers [Greenberg, 1974, Huddleston and Pullum, 2002], suggesting a form of mass quantification rather than an actual counting of separate personnel individuals (but see Gardelle 2018 for some corpus-based counterevidence). Similarly, according to Acquaviva, the individual police officers are not accessible in sentences like (15):

(15) a. *She avoided the police one by one.

Acquaviva classifies nouns like *police* as aggregates, on a par with *furniture* and *jewellery* (for more on the properties of such aggregates or ‘object mass nouns’, which straddle the mass/count boundary in interesting ways, see e.g. Barner and Snedeker 2005, Joosten 2010, Wiese 2012, Sutton and Filip 2016, author of chapter on mass/count distinction this volume, and many others).

An third possible approach to police nouns, that does not treat them as either lexical plurals or mass nouns but as a subclass of collective count nouns, is represented by Copestake [1995], who frames the difference between (at least some) police nouns and other collectives in terms of genericity [see also Quirk et al., 1972, Gil, 1996]: while they are on the whole very similar, police nouns refer to the sum of *all* individuals (at least within a certain domain) to which a given property applies. Thus, while *committee* includes in its extension many different collections of individuals who form committees together, the extension of *clergy* or *aristocracy* can be analysed as a singleton set that includes just the maximal collection of clergypeople or aristocrats. As a consequence, the entailment patterns supported by these nouns are different from those supported non-generic collective nouns like *committee* and *council*:

(16) a. The aristocracy is hopelessly conservative \Rightarrow Aristocrats are hopelessly conservative.
b. The council is hopelessly conservative \nRightarrow Councillors are hopelessly

conservative.

In such a view, the incompatibility of police nouns with pluralisation and various count quantifiers (as shown in (12)) should not be seen as evidence of mass-ness or inherent plurality, but as a (pragmatic) consequence of their singleton nature. Note, however, that not all police nouns are generic in the way illustrated in (16). For instance, Dutch *publiek* ‘audience’ shows the mass-like behaviour characteristic of police nouns, yet refers to specific audiences and not to audience members generally. The same holds for *crew* and *staff* below.

For one of the few systematic comparisons between police nouns and collective count nouns, including an extensive discussion of a small subclass of nouns that seem to be ambiguous or polysemous between both classes (such as *crew* and *staff*, cf. (17-18)), see Gardelle [2018].

- (17) a. Our ship needs more crew.
b. The pirate raid involved multiple crews.
- (18) a. Few staff dare to express their displeasure with the new management.
b. The hotel employs a large staff.

2.3.2 Polysemy

Finally, let us briefly consider sentences like the following:

- (19) a. The whole town had turned out to watch the fireworks.
b. The company wants to fire 100 employees.

As Pustejovsky [1995] notes, alternations like this are quite regular: we can generally use an NP that refers to a place or an institution in order to mean the people that make up (or represent) said institution or place. These uses have a lot in common with ‘ordinary’ collective nouns (most prominently, the ability to take a plural VP in British English and some of its associated properties, such as compatibility with reciprocal quantification). I follow Pustejovsky in assuming that these cases of place/people and institution/people

polysemy are enabled by the presence of an implicit ‘CONSTITUTES’ argument in the noun’s lexical structure, which can be made explicit by type coercion. Unfortunately, there do not seem to be any systematic investigations of the kind of (linguistic or extralinguistic) contexts that license these particular sense alternations, or the extent to which these nouns should be treated as a separate class. However, from corpus studies such as Levin [2001], Joosten et al. [2007] it can be inferred that the behaviour of institution nouns like *company*, *firm* and *union* seems generally less ‘plural’ than the behaviour of non-polysemous nouns like *couple* and *team*: they do not often license plural agreement and anaphora, and are less compatible with predicates denoting human properties such as *drunk* or *blond*.

3 Collective nouns and semantic number

Most formal semantic theories of number assume that singular and plural individuals are also distinguished at the semantic level. Usually, the former are analysed as entities, and the latter as sets or sums of entities (see `author of chapter on the semantic analysis of plurality`, this volume for an in-depth introduction). In the following section, I will assume a set-theoretical framework, distinguishing singular individuals of type *e* (‘atoms’) from plural individuals of type *et* (‘sets’).

Do syntactically singular collective NPs like *the team* correspond to atoms or sets?⁹ At an intuitive level, they show both ‘singular’ and ‘plural’ behaviour. But things are no less paradoxical at a more formal level. On the one hand, there are examples like (20) and (21) that suggest that the denotations of plural and collective NPs are systematically linked:

- (20) a. The committee laughed \Leftrightarrow The members of the committee laughed.
 b. The committee gathered \Leftrightarrow The members of the committee gathered.

⁹Note that this question is independent from the one I briefly addressed in section 2.3, on whether nouns like *police* are lexical plurals. The latter questions whether the denotation of *police* is inherently pluralised in the sense that it does not just include individual police officers, but also all the possible pluralities that can be formed out of them. The current question starts from the assumption that the denotation of *committee* includes just the individual committees (just like other singular count nouns), but questions whether these individual committees have internal structure or not.

- c. My family is intelligent \Leftrightarrow The members of my family are intelligent.
- (21) a. [Mary and Sue / the women] are a happy couple.
 b. My guests are couples from Hungary. [Schwarzschild, 1996]

(19) shows that there are systematic entailment relations between plural and collective NPs. Moreover, the fact that it is possible to use collective nouns as plural predicates (as in (3-4) and (21)) shows that there must be a formal relation between the two: since a sentence of the form ‘X is Pred’ is standardly analysed as true iff the denotation of X is a member of the set denoted by Pred, a predicate like *happy couple* must include the denotations of NPs like *the women* or *Mary and Sue*.

On the other hand, there is also a lot of evidence that the denotations of plurals and collective NPs must, at least to some extent, be independent. As demonstrated in (22-25), there are propositions that can be expressed using a collective NP but not its plural counterpart:

- (22) a. The committee [has 2 members / consists of Mary and Sue / was founded in 1998].
 b. *[Mary and Sue / the women] [have 2 members / consist of Mary and Sue / were founded in 1998] [Barker, 1992]
- (23) My family is old $\not\Leftrightarrow$ The members of my family are old. [Barker, 1992]

This phenomenon is sometimes referred to as a lack of ‘predicate sharing’: certain predicates (e.g. *have 2 members* or *founded in 1998*) are compatible with collective but not with plural subjects or vice versa, or are interpreted differently depending on the subject (e.g. *old* or *large*). (For more on predicate sharing, and the way it is affected by factors such as agreement, see section 4.)

In addition, there is some evidence that collective NP denotations do not allow quantification over their members in the same way that the denotations of plurals do, leading either to ungrammaticality or to the absence of interpretations that are present when the subject is plural. For example, as several people have noted, collective NPs are

at best marginal in reciprocal constructions involving *each other* [Barker, 1992, Schwarzschild, 1996, Lønning, 2011]:¹⁰

- (24) a. Mary and Sue / the women love each other.
b. *The couple loves each other.

Similarly, while (20a) and (20c) show that sentences with a collective subject may be interpreted distributively (i.e., support the inference that the property expressed by the VP holds of each individual member of the collection expressed by the subject), sentences with a more complex VP often lack a distributive interpretation. Thus, while (25-a) is true in a situation in which some girls are singing while the others are dancing (following an interpretation of the sentence in which the disjunction *singing or dancing* applies to each girl individually), (25-b) lacks this interpretation [de Vries, 2017]. It is usually argued [Winter, 1997, Champollion, 2010, de Vries, 2017, and many others] that distributivity in sentences like (25) is derived by means of a covert quantificational mechanism, which suggests that the denotations of collective NPs resist quantification.

- (25) a. The girls are singing or dancing.
b. The girl team is singing or dancing.

The paradoxical behaviour of collective NPs - sometimes behaving like set-denoting NPs and sometimes quite unlike them - has general consequences for any theory of their semantics. Approaches that treat collective NPs as atomic can easily explain (22)-(25), but need additional mechanisms to account for (20)-(21). Conversely, approaches that treat collective NPs as sets of entities, on a par with plurals and conjunctions, can easily explain (20)-(21) but need additional assumptions in order to account for (22)-(25).

¹⁰However, Jenny Doetjes and Patricia Cabredo-Hofherr (p.c.) both point out that in French, collective subjects are compatible with the reflexive/reciprocal clitic *se*, e.g. *Ce couple se déteste* ‘This couple hates each other’.

3.1 Collective NPs as atoms

Approaches like Barker [1992] and Schwarzschild [1996], and to some extent Landman [1989], assume that collective nouns range over atomic entities, just as non-collective nouns like *cat* or *semanticist*. Barker’s main argument is the lack of predicate sharing exemplified in (22-24): if singular collective NPs denoted sets of entities just like plural definites, we would expect them to be compatible with the same range of predicates (and have the same range of interpretations), which is not the case. In addition, Schwarzschild (1996) notes that grammaticality contrasts like the one in (26) suggest that collective nouns pattern with ordinary atomic nouns (in this case, with *car* rather than with *boys*):¹¹

- (26) a. *Part of the boys is/are from Texas.
b. Part of the car was manufactured in the Czech Republic.
c. Part of the team is from Texas.

De Vries (2017) treats collective NP denotations as atomic based on a series of contrasts similar to (25), which indicate that the members of collections are not accessible to compositional processes in the same way that the members of plural denotations are. In particular, as already suggested above, they cannot be quantified over, which would be unexpected if collective NPs denoted sets.

Atomic approaches to collective nouns generally account for entailments such as those in (20) in terms of meaning postulates or world knowledge-based reasoning [Scha, 1981, Barker, 1992, Winter, 2001, Champollion, 2010, Winter and Scha, 2015, de Vries, 2017]. Thus, the fact that the sentences in (20) are more or less equivalent is not treated as a formal entailment, but as a ‘pseudo-equivalence’ [Winter and Scha, 2015] that is the result of reasoning about parts and wholes in relation to the predicate meaning – comparable to the way a sentence like *I am in Utrecht* supports the inference that my head, left hand and pancreas are in Utrecht.

With respect to ‘mixed’ predications - as in (21) - there are two possible ways to fix the type mismatch that results under an atomic approach. The first, exemplified by Winter

¹¹The judgements here are Schwarzschild’s; note that Pearson [2011] and de Vries [2015] use very similar sentences, which they judge grammatical, in order to argue in favour of a set denotation for collective NPs.

[2001], is to assume that the denotation of a referential plural can be typeshifted into a corresponding *group* or *impure atom* [Link, 1984, Landman, 1989]. This approach treats a sentence like (21a) as a form of singular predication: the set denoted by Mary and Sue is ‘fused’ into a conceptually complex but semantically singular individual, and the sentence is true iff that individual is a member of the set of happy couple-entities. The second solution, first mentioned more or less in passing in Link [1984] but worked out extensively by Landman [1989], takes the opposite route: it assumes that the atoms denoted by collective NPs can be ‘broken up’ into the set of the collection’s members by a ‘fission’ typeshift. For example, in (27-b), breaking up the atom denoted by *The Talking Heads* yields the right type of argument for the plural predicate *are pop stars*.

- (27) a. The Talking Heads is a pop group.
 b. The Talking Heads are pop stars.

In fact, it is a bit of a simplification to classify Landman [1989] as an ‘atomic approach’, since he proposes a special denotation for collective NPs that takes the set of the collection’s members as its main building block: in Landman’s approach, a collective NP denotes a singleton set with a set of entities as its sole member. The fission typeshift simply frees this set from its singleton enclosure, turning a singular denotation into a plural one.

In contrast, Barker [1992] and Schwarzschild [1996] treat the referents of collective NPs as atoms like any other (i.e., simple entities without any internal structure). This makes accessing the collection’s members somewhat less straightforward, and accordingly, Barker’s and Schwarzschild’s versions of the fission typeshift are both more restricted and more specific. Barker [1992] proposes a membership function that is built into the denotation of *of*, in order to account for the semantics of NPs like *a committee of women*; he also assumes that this membership function can be triggered by the presence of a plural VP in British English. Schwarzschild [1996] assumes a special lexical entry for predicative *be* in order to deal with mixed predications like (21) and (27), that incorporates a similar membership function.

3.2 Collective NPs as sets

In one of the first formal semantic analyses of collective NPs, Bennett [1974] treats them as set-denoting, just like coordinated NPs and referential plural NPs. In more recent years, set analyses of (animate) collective NPs seem to have recovered from the blow dealt to them by Barker and Schwarzschild, as evidenced by their revival in Kratzer [2001, 2008], Pearson [2011], Magri [2012], de Vries [2013, 2015]. These authors present various kinds of new evidence for the plural nature of collective NP denotations, which they claim cannot be accounted for under an atomic account. For example, Magri notes that sentences like (28) can be interpreted distributively by many speakers:

(28) The team is eating a sandwich.

Sentence (28) does not require the sharing of a single sandwich among all members of the team, but is also true if each member of the team ate their own sandwich.¹² Given the standard analysis of distributivity as a form of quantification over the members of the subject set, the availability of such an interpretation is unexpected unless *the team* denotes a set (but see de Vries 2014 for an alternative explanation in terms of non-quantificational distributivity effects and object incorporation; cf. also **author of chapter 7 on nominal number**, this volume).

Another type of argument is provided by Pearson [2011] and de Vries [2015], who study the behaviour of animate collective NPs (Pearson's 'committee NPs') in partitive constructions in (British) English and Dutch respectively, and conclude that they pattern with plurals, not with atomic NPs.

- (29) a. Half of the wall had been painted yellow.
b. Half of the women had been painted yellow.

¹²What blocks a distributive interpretation for some speakers appears to be not the collective subject, but the lack of dependent plurality in the object. Many speakers of English require a dependent plural (here, *sandwiches*) in order to get a distributive interpretation for both (28) and its plural-subject equivalent *The team members are eating a sandwich*. However, de Vries [2015] notes that speakers who are able to interpret *The team members are eating a sandwich* distributively, also accept this reading in the case of (28). See **author of chapter on dependent plurals** (this volume) for more on dependent plurality.

- c. Half of the committee had been painted yellow.

In line with assumptions from Barker [1998] and Chierchia [2010], sentence (29-a) (in which the embedded NP is atomic) is true in a wider range of situations than sentence (29-b) (in which the embedded NP denotes a set). Partitive quantification over an atomic entity (here, *the wall*) forces a mass interpretation, which means the sentence is true in all situations in which half of the wall-stuff has been painted yellow, including one in which half of each brick has been painted yellow. In contrast, partitive quantification over a set of entities only allows a cardinality-based interpretation. Thus, sentence (29-b) is only true if half of the total number of women counts as ‘painted yellow’ in the context; if each woman meets just half of the painted-yellow requirements, sentence (29-b) is false. Based on introspective judgements, Pearson claims that (29-c) patterns with (29-b) in this respect, indicating that *the committee* is set-denoting, just like *the women*. In a quantitative study with speakers of Dutch, de Vries [2015] empirically confirms Pearson’s intuitions: participants overwhelmingly disallow mass-based quantification with both animate collective and animate plural NPs.

The above approaches account for the various differences between collective NPs and plurals, as exemplified in (22)-(25), in different ways. For example, Kratzer [2008], de Vries [2015] argue that morphosyntactic number plays a crucial role. For Kratzer, plural number on the NP introduces an additional pluralisation operator that enables a wider spectrum of possible meanings for plural NPs compared to collective NPs. For De Vries, it is the number of the VP that matters: she argues that pairing a collective subject with a singular VP introduces a type mismatch that forces the subject to be typeshifted into an impure atom. Pearson [2011] and Magri [2012] appeal to the interaction between NP semantics and other semantic phenomena. For Pearson, collective NPs are sensitive to intensionality in a way that plural NPs are not, whereas Magri argues that the difference between the two is rooted in the difference between state-level and individual-level predicates.

An additional issue with which set-based approaches to collective NPs (as well as any atomic approach, such as Landman’s, that assumes a one-to-one mapping between a collective NP denotation and the corresponding set of member entities) are faced, is the

observation that the same set of individuals can form more than one group. Two committees can, either accidentally or deliberately, consist of precisely the same members, while still being distinct committees. This observation is central in the event-based approach outlined in Kratzer [2001], who suggests that collective nouns denote relations between sets of individuals and ‘grouping’ states; intuitively, an NP like *a choir* means something like ‘a set of individuals in a choir-state’. Pearson [2011] incorporates an intensional argument into her semantics for collective nouns in a very similar way; for her, collective nouns denote functions from possible worlds to sets of individuals. On the other hand, Landman [1989] and de Vries [2015] argue that the ability to bear different ‘roles’ or ‘guises’ - and to have different or even incompatible properties in each of them - is a general property of definites and not something particular to collective NPs. For example, in a world where the judges are also the hangmen, it can still be true that the judges are on strike while the hangmen are not, even though they are the same individuals. The second part of Landman [1989] is largely devoted to developing an ‘intentional’ (with a *t*) semantics of such guises.

4 VPs and agreement

As we have seen in the introduction, (animate) collective NPs support both discourse and bound plural anaphora. Bock et al. [2006] show that speakers of both British and American English are equally likely to follow a singular collective NP with a plural pronoun, regardless of whether the pronoun is bound by the antecedent or not. The ability to occur with a plural VP, however, is much more limited cross-linguistically: apart from British English, such agreement mismatches are attested in Spanish, Old Church Slavonic, Samoan, the Brazilian language Paumarí, and the Caucasian language Kumaxov (all mentioned in Corbett 2000), as well as Ancient Greek [Birkenes and Sommer, 2014] and Tuvaluan [Besnier, 2000, p360]. In Tuvaluan, plural agreement on the verb (expressed by reduplication) is even obligatory in some cases involving compounds with a singular collective head (e.g. *kau fai gaaluega* ‘group of workers’ in (30)), even though it is generally optional:

- (30) Tena kau fai gaaluega ne mmai/*vau i te tausaga foki teelaa.
his group do work PAST come.AGR/come in the year also that
(Tuvaluan; from Besnier 2000:519)

‘His group of workers also came that year.’

Most of the research into speakers’ agreement choice, and the factors that influence it, has involved (British) English. A common intuition, already expressed by Jespersen [1927], is that agreement choice may reflect whether we conceive of a particular group as a single entity or as a collection of individuals; formalising this intuition, Bennett [1974] claims that collective predicates have to appear in the singular while distributive predicates receive plural inflection.

- (31) a. My family is old and distinguished.
b. My family are early risers.

This claim is not supported by corpus research, however. Levin [2001] found that speakers’ agreement preferences depend most strongly on the nouns themselves rather than on the VPs; for example, *couple* and *staff* generally trigger plural agreement (81-100% of their occurrences in the BNC), while *army*, *government* and *party* are very unlikely to appear with a plural VP (21% or less of their BNC occurrences). Similar results were reported by Depraetere [2003] and Levin [2006] on English, and by Joosten et al. [2007] on Dutch with respect to the licensing of plural anaphora. Joosten et al. argue that collective nouns fall on a gradient with respect to their tendency to be either conceptualised as a sum of multiple individuals (the *member level*) or as a single unit (the *collection level*). They note that the level of conceptualisation may influence the interpretation of ambiguous predicates:

- (32) a. This club is old.
b. This audience is old.

While *old* in (32-a) is more likely to be interpreted as a property of the club itself, in (32-b) it is more likely to be interpreted as a property of the members of the audience. In addition, Joosten et al. show that the tendency of nouns like *audience* to be

conceptualised at the member level is also reflected in their tendency to agree in the plural and license plural anaphora, while nouns like *club* that are conceptualised at the collection level are more likely to trigger singular agreement and anaphora.

While agreement choice may be influenced by a particular noun's level of conceptualisation, the reverse is also true. With respect to *old*, Barker [1992] notes that VP number may disambiguate between member-level and collection-level interpretations: unlike (33-a), which can mean that the committee is an old institution, (33-b) (in which the collective subject appears with a plural VP) can only mean that the members of the committee are old¹³ (compare also (23)):

- (33) a. The committee is old.
b. The committee are old.

Pollard and Sag [1994] note that predicates that express properties of the groups themselves (at the collection level, to use Joosten et al.'s terminology) never trigger plural agreement, as in (34) (from [Pollard and Sag, 1994]; compare also (22b)):

- (34) *A new committee have been constituted.¹⁴

Plural agreement may even force interpretations that are unavailable otherwise. Schwarzschild [2009] discusses a class of predicates he calls 'stubbornly distributive' (e.g. *large, small, round*), which, when combined with a collective subject and agreeing in the singular, are never interpreted at the member level (regardless of the noun). (This distinguishes them from *old* in (33-a), which is ambiguous.)

¹³Barker also claims that (33-a) does not have the 'old members' interpretation, but this appears to be too strong a claim: according to my British English informants, sentence (33-a) can have both interpretations, just as it does in other varieties of English.

¹⁴However, an anonymous reviewer reports finding sentences like this in various forms of global English, such as the following from an Indian government website:

- (i)The following committee have been constituted for the smooth & effective functioning of various activities in the Vidyalaya during the academic year 2016-17.

(35) My family is large \nrightarrow The members of my family are large.

However, in (36), it is the large-collection interpretation that is unavailable. This shows that the interpretation of a collective sentence may be completely determined by VP number, regardless of the lexical meaning of either the collective noun or the predicate.

(36) My family are large \leftrightarrow The members of my family are large. [Diver et al., 2011, p442]

Summing up, whether speakers of British English have a preference for either singular or plural agreement mostly depends on the collective noun itself, although singular seems to be obligatory for a small class of collection-level predicates (*founded, constituted, have x members...*). Conversely, the use of a plural VP always triggers a member-level interpretation of the subject noun.

The number of the VP also has more structural semantic consequences that are not related to the interpretation of the noun-predicate combination itself. As observed by Elbourne [1999] and Sauerland and Elbourne [2002], whether certain British English sentences with a collective subject display scope ambiguity depends on the number of the VP. Sentence (37-a) - with a singular VP - has both the surface scope and the inverse scope reading, but sentence (37-b) - with a plural VP - only has the former.

(37) a. A northern team is likely to be in the final. (\exists >likely, likely > \exists)
b. A northern team are likely to be in the final (\exists >likely, *likely > \exists)

Sauerland and Elbourne account for this in terms of feature-checking and covert movement at LF: they propose that British English collective nouns have two different number features, one [+SG] feature that is responsible for singular agreement with the determiner, and a separate [+PL] feature responsible for plural agreement with the VP. If the latter feature is checked, quantifier lowering at LF is blocked, ruling out the inverse scope reading.¹⁵

¹⁵In a 2004 squib, Sauerland outlines a purely semantic solution: he assumes that the compatibility of British English collective NPs with plural VPs indicates that they have been typeshifted from an atom into

Finally, de Vries [2013] observes that quantificational distributivity is unavailable in sentences with a collective subject when the VP is singular (see (25-b) and the surrounding discussion), but available when the VP is plural: sentence (38) behaves exactly like the plural-subject sentence in (25-a).

- (38) The girl team are singing or dancing. \Leftrightarrow The members of the girl team are singing or dancing.

There is a common denominator in all the above examples: pairing a collective subject with a plural VP invariably makes the subject behave exactly like a plural definite would in that context. As a consequence, the conclusion that collectives are (at least optionally) set-denoting in British English is fairly uncontroversial even among semanticists who otherwise prefer an atomic approach to collective NPs (such as Barker, Schwarzschild and Sauerland).

5 Conclusions

Collective nouns combine properties associated with singularity or ‘one-ness’ and properties associated with plurality, on all levels of grammar (lexical-conceptual, morphosyntactic and semantic). Because of this, they provide a window into the various factors that influence the expression and interpretation of number. Why do some singular NPs trigger plural agreement while others do not? How does morphosyntactic number influence whether an NP refers to an indivisible atom or a quantifiable set? Are collective nouns semantic plurals that are sometimes forced to behave like singulars, singulars that are sometimes allowed to behave like plurals, or simply ambiguous? Does this vary between languages? How are collective nouns related to other nouns whose status as either singular or plural isn’t clear-cut, such as *pluralia tantum* (*scissors*), aggregates (*furniture*, *police*) or lexical plurals?

In this chapter, I have introduced many of these questions, as well as some perspectives on

a set, and that this typeshift is much like the iota operator in resulting in a specific, scopeless NP [Sauerland, 2004].

and possible answers to them. Other questions - in particular, those related to the status and expression of collective nouns in languages other than English, as well as the relation between collective nouns and other nouns with irregular number properties - I have largely had to leave aside. Hopefully, this chapter will provide a useful starting point for researchers interested in both comparative typology and formally explicit theories of grammar.

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