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*‘They are what define us’,
‘You are what make us great’:
Plural-agreeing what in free
relatives serving as predicates*

1. Plural-agreeing *what*

In this short paper, I explore a peculiar number agreement phenomenon, illustrated by English sentences such as those in the title.¹ A few naturally occurring examples (from a large pool of cases retrievable via an internet search for strings like “are what are”, “are what define”, “are what give”, “are what make”) are given in (1)–(4) (in (3) and (4), context shows that *you* has a plural referent):

- (1) a. I am the totality of my emotions, my feelings, and my thoughts;
they are what define me
(*Unity: The Universal Principle Inherent in All of Creation*, by Reynaldo Pareja; Xlibris Corporation, 2020)
- b. I want to believe our dreams are what define us
(*Demons are Forever*, by Kim Baldwin & Xenia Alexiou; Bold Strokes Books, 2012)
- c. they are what define and regulate the discursive spaces, that which oversees the formation of individual enunciations
(*Cultural Semiotics: For a Cultural Perspective in Semiotics*, by Anna Maria Lorusso; Springer, 2015)
- d. these radical transformations are precisely what define German identity
(*21 Lessons for the 21st Century*, by Yuval Noah Harari; Penguin Random House, 2018)
- e. the elements are what define our true identity
(*Out of the Crowd: The Ultimate Guide to Mastering the Art of Standing Out*, by Richard Mwebesa; Xlibris Corporation, 2020)

¹ I am not aware of any discussion of this particular number agreement phenomenon in the morphosyntax literature; but if this has been discussed previously, I hereby apologise for my ignorance and failure to give due credit.

- f. impossibility, like possibility, must be an existential notion, and if possibilities are what define me, then impossibilities are what define me negatively
(Heidegger, *Authenticity and the Self: Themes From Division Two of Being and Time*, edited by Denis McManus; Routledge, 2015)
- (2) a. doctrinals are what are called truths; these truths are what are conjoined to good
(*Arcana Cœlestia*, by Emanuel Swedenborg; J. Hodson, 1812)
- b. non-compositional phrasemes are what are commonly known as idioms
(Wikipedia, under ‘phraseme’)
- (3) a. you are what give the Club its glamour
(*Storms Never Last: Memoirs of a Playboy Bunny*, by Joy Elaine McMillan; Xlibris Corporation, 2011)
- b. you are what give life to the clothes, not the other way around
(<https://stylingbykristel.com/blog/are-your-clothes-reflecting-your-personal-brand/>)
- (4) a. you are what make The Farm so special
(<https://twitter.com/bonnaroo/status/1213882391556739074?lang=en>)
- b. you are what make our dreams come true
(from the song ‘You Are Us, We Are You’, by Autograph)
- c. you are what make small towns and big cities what they are
(<https://twitter.com/karliekloss/status/1245046655491194884?lang=en>)
- d. you are what make our restaurants run so smoothly and allow us to be successful
(<https://weswings.com/2020/03/11/message-from-karen-ed/>)

The free or headless relative in the examples in (1)–(4) serves as the predicate of the copular clause in which it occurs, and takes a plural subject. In all of these cases, the *what* introducing the relative controls plural agreement with the finite verb of the relative clause. This is unusual: *what* cannot trigger plural agreement in questions (5a), in free relatives serving as arguments (5b–d), or in pseudoclefts with a coordination of clauses as the focus (5e). (That *whatever*+N_[PL] can trigger plural inflection is a function of N_[PL], not of *what*.)

- (5) a. what define*(s) us?
- b. what define*(s) us cannot be characterised with just a few keywords
- c. I am trying to find out what define*(s) us
- d. we should give what define*(s) a lot more thought
- e. what define*(s) us is that we’re linguists and that we’re proud of it

The subject of predication can be human, as in (3) and (4). This is noteworthy in light of the fact that it is usually impossible to try to make *what* (plural-agreeing or otherwise) the subject of a predicate requiring a human subject: in contrast to (6a), the example in (6b) is impossible — not surprisingly, in light of the fact that *what* is not normally used with reference to humans. (3) and (4) stand out as apparent exceptions to this.

- (6) a. you are the people who/that love me the most
- b. *you are what love(s) me the most

The question that this paper addresses is what facilitates plural verb agreement and human subjects in the sentences in (1)–(4). I begin by showing, in section 2, that these properties of *what* present themselves only in headless relatives that serve externally as predicates, and that they require an overt RELATOR to introduce them. Section 3 then presents an outlook on the syntax of these headless relatives that explains the occurrence of plural agreement and derives the need for an overt RELATOR, by postulating a plural silent noun as the head of the relative clause and subjecting this silent noun to licensing requirements. Section 4 subsequently shifts the discussion to the form of the relative operator (*what*), and provides an account for the fact that plural-agreeing *what* relatives exist in English but not in closely related Dutch. In the conclusion (section 5), the outcome of the discussion is placed in the context of the syntax of relativisation.

2. The *what* relative as a predicate introduced by an overt RELATOR

Its ability to trigger plural agreement on the finite verb of the headless relative clause in (1)–(4) is not something that *what* evinces generally. Although their counterparts with singular verb agreement in the headless relative are fine, sentences such as the ones in (5) are ungrammatical when *-s* is omitted. It is never possible, as far as I am aware, to use *what* as a plural-agreeing subject of a free relative when the free relative is not a predicate. The headless relative can itself be the occupant of the structural subject position of the containing clause, in a predicate inversion construction (see (7b)) — but it must be the underlying predicate of the clause in which it is embedded; and when it occurs in subject position, it externally controls plural agreement with the copula (cf. **what define us is these things* and *what I like the most is these pictures of myself*).

- (7) a. these things are what define us
- b. what define us are these things

Not only must a headless relative with plural-agreeing *what* be a predicate, it must usually be the predicate of a copular sentence. There can be no plural agreement with *what* in headless relatives embedded under raising or ECM verbs when no copula is included:

- (8) a. I consider them/these *(to be) what define us
 b. I consider them/these *(to be) what make us great
 c. these interests seem *(to be) what define us as individuals
- (9) a. perceptual features tend to be what define concrete, specific instances as such
 (*The Oxford Handbook of Social Cognition*, ed. by Donal E. Carlston; OUP, 2013)
 b. the labels are not supposed to be what define us
 (<https://theworld.org/stories/2014-11-12/unlikely-pair-lebanon-team-hopes-creating-change>)

A verbal copula is not always needed — but in its absence, an overt non-verbal mediator of the predication relation between the headless relative and its subject (e.g., *as*, *into*) is called for:

- (10) a. *they make their dreams what define them
 b. they make their dreams into what define them
- (11) a. to see the manifestations of violence as what define the shared world
 (“‘In their own words’: Academic women in a global world’, by Filipa Lowndes Vicente; *Análise Social* 55, 2020)
 b. to see these effects as what define you
 (*7 Principles of Identity: How to Discover the True You*, by Ojo Mathew; AuthorHouse 2015)
 c. borders are seen as what define a nation-state
 (*Frontier Encounters: Knowledge and Practice and the Chinese, Russian and Mongolian Border*, ch. 3, by Uradyn E. Bulag; OpenBook Publishers, 2015)

What unites the verbal copula in (8)–(9), *into* in (10b) and *as* in (11) is that they all serve as RELATORS of predication structures, in the sense of Den Dikken (2006): they lexicalise the functional head that establishes the syntactic relation between the predicate and its subject, shown in (12).

- (12) [RP SUBJECT [R' RELATOR=*be/into/as* [PREDICATE]]]

The fact that headless relatives with plural-agreeing *what* are always predicates indicates that what gives *what* the ability to trigger plural agreement within the free relative is tied to the function of the headless relative in the containing clause: predicate rather than argument. The fact that the RELATOR that introduces the relativised predicate must be overtly expounded suggests that this predicate needs to be externally licensed, with the overt RELATOR playing this part. In the following section, I will present the outlines of an account.

3. Proposal

The core of the proposal is that what appear to be headless relatives with plural-agreeing *what* are actually headed relatives whose head is a silent plural noun, which I represent as ‘THINGS’:

- (13) [HEAD THINGS] [RC *what* V_[PL] ...]

Though the silent head of the relativised noun phrase is itself inanimate, it is just the sort of inanimate noun that allows its projection to be predicated of a human subject: see (14). This is what enables (13) to occur as the predicate of the examples in (3)–(4), with human subjects.

- (14) a. you are all the things I want a woman to be
 b. you are everything I want a woman to be

The syntax in (13) also provides an account for (a) the plural agreement on the verb in the relative CP, and (b) the external distribution of the silent-headed relative in (13). Regarding (a), the operative hypothesis is that when the head of the relative clause is plural, the *wh*-operator of the relative clause shows concord in number with the head. This hypothesis is well established, entirely independently of the *what* relatives under discussion: though the *wh*-operator *who* is ordinarily singular and hence cannot trigger plural agreement on the verb in questions (15), it does bring about plural agreement in relative clauses with a plural head: (16b). (As Mark Newson, p.c., points out, plural agreement in the relative clause in cases of the type in (1) is not obligatory. This may indicate either that concord between ‘THINGS’ and *what* in (13) is not obligatory or that the silent abstract head can be singular when its subject is explicitly plural.)

- (15) who {is/*are} coming to the party?
 (16) a. the girl who {is/*are} coming to the party
 b. the girls who {are/*is} coming to the party

To adequately rein in the external distribution of (13), I hypothesise that the silent head ‘THINGS’ is subject to two licensing constraints (see Rizzi 1986 on the licensing of *pro*): content licensing and formal licensing. For content licensing purposes, the silent head of the relative must be able to recover its plurality via concord with the subject of predication. This derives the fact that (13) is only allowed in syntactic contexts in which it takes a plural subject.

In addition to this content licensing requirement, the silent plural head ‘THINGS’ in (13) is also subject to a formal licensing restriction. The structure in (13) must be formally licensed by the complement of an overt RELATOR — a copula (as in (8) and (9)) or a P-element (as in (10) and (11)). In the absence of an overt RELATOR, formal licensing fails. This formal licensing requirement accounts for the obligatoriness of the copula in *these things seem *(to be) what define us* or *we consider these things *(to be) what define us* (recall (8)) and copular Ps such as *as* and *into* in (10) and (11).

4. The relative operator

The silent-headed relative in (1)–(4) denotes a sum or totality of things or properties, in line with what is typical of headless relatives. Also in concert with headless relatives is the form of the relative operator: *what*. But the syntax just proposed for the *what*-relatives in (1)–(4) makes them out to actually be *headed* relatives — and in standard English, *what* cannot normally be used as a relative pronoun in headed relatives: (16) is possible in many varieties but not in the standard language.

(16) %the things what he did

To square the occurrence of *what* in (13) with the ungrammaticality of (16) in standard English, I hypothesise that when the head of the relativised noun phrase is a silent inanimate noun, the *wh*-operator and the silent noun spell out jointly as *what* — i.e., *what* = THINGS + *wh*-Op.

The fact that the ‘ordinary’ operator for a relative clause construed with an inanimate head is a [+WH] element in English (*which*) but not in Dutch (*die/dat* ‘that_{DEM}’) is in all likelihood directly responsible for the fact that (13) does not appear to exist in the latter language. I have found several tokens of the string “zijn wat maken” ‘are what make’ on the internet (see (17)); but interestingly, all of these look like mangled automatic translations from English: they all have the wrong word order in the relative clause, with the object placed to the right of the verb *maken* ‘make’ rather than to its left (in accordance with the OV syntax of Dutch).

- (17)
- a. Functies zoals stijlen, preflighting en meester's zijn wat maken Adobe InDesign zo'n krachtige lang document applicatie.
(<https://context.reverso.net/translation/dutch-english/wat+maken?d=0>)
'functions such as styles, preflighting and masters are what make Adobe InDesign such a powerful long document application'
 - b. Het is geen geheim dat veel van de tradities en overtuigingen in Belize zijn wat maken het beroemde juweel zo kleurrijk.
(<https://www.travelbelize.org/nl/event/san-jose-succotz-festival/>)
'it is no secret that many of the traditions and persuasions in Belize are what make the famous jewel so colourful'
 - c. De betoverende kleuren en geluidseffecten zijn wat maken Zen Koi heel speciaal.
(<https://geekloving.net/nl/10-beste-ontspannende-spellen-op-android-die-u-moet-downloaden>)
'the enchanting colours and sound effects are what make Zen Koi very special'
 - d. De materialen zijn wat maken de schoenen lichtgewicht, duurzaam, comfortabel en wat velen noemen een "runner's shoe".
(<https://www.formal-informal.eu/de-beste-sneakers-voor-het-hele-jaar/>)
'the materials are what make the shoes light-weight, durable, comfortable and what many call a "runner's shoe"'
 - e. Deze ongelooflijke attributen zijn wat maken bitcoin vrij uniek ten opzichte van andere activa klassen die er zijn.
(<https://cryptominded.com/nl/bitcoin-stock-to-flow-2/>)
'these incredible attributes are what make bitcoin quite unique with respect to other activa classes that exist'
 - f. De ingrediënten zijn wat maken deze maaltijd heerlijk.
(<https://allhealth.pro/nl/gezondheid/swank-diet-for-multiple-sclerosis/>)
'the ingredients are what make this meal delicious'
 - g. de kwaliteit van hun schoenen en de prijsstelling zijn wat maken ze een van de beste
(<https://bestchinaproducts.com/nl/best-replica-shoes/>)
'the quality of their shoes and the pricing are what make them one of the best'
 - h. De unieke mix van jalapeno, cheddarkaas en een IPA zijn wat maken deze duik moeilijk te weerstaan.

(<https://www.wikisailor.com/13-party-hapjes-hapjes.html>)

‘the unique mix of jalapeno, cheddar cheese and an IPA are what make this dive difficult to resist’

- i. Mix ins zijn wat maken dit recept leuk (en smakelijk!).
(<https://acuinitiative.org/nl/5-minuten-pindakaas-snackballen/>)
‘mix-ins are what make this recipe fun (and tasty!’)
- j. Tools zijn wat maken de Photoshop slagen
(<http://www.nldit.com/software/photoshop/201309/150046.html>)
‘tools are what make the Photoshop succeed’

(17j) is even worse than the other attestations, not only messing up word order but in addition featuring *maken* as a causative verb taking a bare-infinitival complement (grammatical for *make* in English but impossible for *maken* in Dutch). All the examples in (17) are ungrammatical as they stand; and even with their word-order problems fixed, (17a–i) do not sound even remotely natural to me.

In Dutch, only headless relatives and inanimate instances of what Citko (2004) calls ‘light-headed relatives’ feature [+WH] relative pronouns (*wie* ‘who’ and *wat* ‘what’): (18). Ordinary headed relatives are introduced in the language by a demonstrative pronoun, as shown in (19).

- (18)
- | | | | | | | |
|----|-----------------|------|------|-------------|-------------|--|
| a. | wie | dit | zegt | is gek | | |
| | who | this | says | is crazy | | |
| b. | wat | hij | zegt | is onzin | | |
| | what | he | says | is nonsense | | |
| c. | dat(gene)/alles | | wat | hij zegt | is onzin | |
| | that/everything | | what | he says | is nonsense | |

- (19)
- | | | | | | | |
|----|-----|--------|----------|-----------|-----------|----------|
| a. | een | man | die/*wie | dit zegt | is gek | |
| | a | man | DEM/who | this says | is crazy | |
| b. | de | dingen | die/*wat | hij | zegt zijn | onzin |
| | the | things | DEM/what | he | says are | nonsense |

Because the relative clauses in (19) have no *wh*-operator but a demonstrative in their left periphery, they make no source available for the [+WH] element *wat* ‘what’ when the head of the relative clause is the abstract noun THINGS, as in (13). This, combined with the fact that headless relatives in Dutch (as in English) are introduced by a *wh*-operator, not a demonstrative, leaves no path towards for the construction of silent-headed relatives with the structure in (13).

Irina Burukina (p.c.) points out that in Russian, constructions of the type in (1) are available but only in the presence of an overt demonstrative:

- (20) neobxodimyje tseli – eto *(te), čto opredel'ajut dejatel'nost' organizatsii
 necessary goals this those what define.PL activity organization

She adds that, in light of the discussion of Dutch in the preceding paragraphs, the obligatoriness of *te* 'those' can be understood: in headed relative clauses, Russian uses the relative operator *kotoryj* 'which'; this *wh*-operator and the silent head 'THINGS' cannot spell out jointly as *čto*, so the head must be spelled out separately. That it is spelled out as a demonstrative leads us to examine the bigger picture of 'headless' and 'light-headed' relatives', in the closing section.

5. The bigger picture

The silent-headed relative in (13) is a member of a family of relativisation constructions that includes at least the following members (see Citko 2004 for discussion of (21a–c); (21d) is added to the family in this paper).

- (21) a. headed relatives
 b. headless relatives
 c. light-headed relatives
 d. silent-headed relatives

An interesting question is how (21d) compares to (21b). In these closing remarks, I briefly address this question against the background of the literature.

The literature on headless (or 'free') relatives has produced two major outlooks on them. On one analysis (see Groos & Van Riemsdijk 1981), the *wh*-element that introduces the relative clause is the occupant of the left periphery of the relative clause, with a silent pronoun serving as the head. The alternative analysis (due to Bresnan & Grimshaw 1978) treats the *wh*-element as the head of the relativised noun phrase, with the left periphery of the relative clause being empty (either radically or on the surface).

- (22) a. [HEAD Ø] [RC *what* ...]
 b. [HEAD *what*] [RC Ø ...]

The syntax in (13) approximates that in (22a). There remains an important difference between these two structures, however: while the silent head of the relative clause in (13) is an abstract common noun, the structure in (22a) avails itself of a silent pronoun (*pro* or PRO). Nominal structures headed by a silent pronoun are known to occur in argument positions: indeed, PRO *only* has argument functions (more specifically, it is restricted to the subject function); and *pro* can serve as subject or object depending on the availability of a licenser

for it (see Rizzi 1986). Headless relatives can also serve as predicates (for instance in specificational pseudoclefts); but they are by no means restricted to predicative functions. By contrast, (13) is strictly confined to serving as a predicate born as the complement of an overt RELATOR. This is what gives (13) a much more limited distribution compared to headless relatives.

Null nouns have been known for some time to exist alongside null pronouns (see esp. the work of Panagiotidis 2002, 2003). That null pronouns can be relativised has been a staple of the literature on free relatives for decades. What this paper brings to the table is the idea that null nouns can also be relativised, and that when this happens, the relative operator and the silent head amalgamate into something that in English sounds exactly like the element introducing headless relatives: *what*. If we adopt the analysis of headless/free relatives in (22a), (21) translates as the typology of relativisation constructions in (23) (for English). The silent-headed relatives of (1)–(4) complete the logical hypothesis space, and tilt the playing field for the analysis of headless relatives in favour of (22a).

(23)	a.	headed relatives	[HEAD NOUN]	[RC <i>wh</i> ...]
	b.	headless relatives	[HEAD PRONOUN \emptyset]	[RC <i>wh</i> ...]
	c.	light-headed relatives	[HEAD PRONOUN]	[RC <i>wh</i> ...]
	d.	silent-headed relatives	[HEAD NOUN \emptyset]	[RC <i>wh</i> ...]

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