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The interpretation of plural mass nouns in Greek

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ABSTRACT

This paper focuses on the interpretation of what has been considered an expletive marker in the grammar of the Greek nominal domain: the plural number of mass nouns. We present the results of an experimental investigation on the interpretation of plural mass nouns by native speakers of this language, and we propose a speech act analysis according to which at the time of producing utterances that contain plural mass nouns the speaker performs two speech acts: an assertion and an expressive speech act by which (s)he publicly commits to an emotive stance of DISLIKE towards the expressed proposition ϕ . This stance is analyzed as an emotive judgment with respect to ϕ , the expression of which directly transfers the speaker's emotion from the conversation into the speaker and addressee's common ground.

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1. Introduction

The term *expletive* has been traditionally used in the linguistic literature to refer to linguistic categories whose presence is motivated by formal requirements, but which appear to have no contribution at the level of interpretation. Within the nominal domain one such category has been associated with the definite article of so-called inalienable constructions in Romance (e.g., the French definite article *la* in *Les enfants ont levé la main* lit. the.PL children have raised the.SC hand 'The children raised their hand'; Vergnaud and Zubizarreta, 1992:596, (1a)), or the definite article that precedes proper names in Romance (e.g., the Italian definite article in *Il Gianni mi ha telefonato* lit. the Gianni me has phoned 'Gianni called me up'; Longobardi, 1994:622, (24b)). The first of these phenomena reflects a semantic dependency between the article *la* and the subject of the sentence. The second one reflects either a null contributor to meaning, if one assumes that proper names are rigid designators of their referential entity (Kripke, 1980), or a function that turns a predicate relativized to a naming convention into something used in an argument position (Matushansky, 2008). An expletive determiner has also been associated in natural languages with so-called weak definites (e.g. *go to (the) hospital*), definite DPs that are part of VPs denoting institutionalized activities, which have been argued not to refer to specific individual objects in the world (Carlson and Sussman, 2005; Carlson et al., 2006; Scholten and Aguilar-Guevara, 2010; Beyssade, 2013; Corblin, 2013; Aguilar-Guevara, 2014; Schwarz, 2014; Espinal and Cyrino, 2017a, 2017b; a.o.).¹

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¹ Outside the nominal domain expletive phenomena include, among others, the so-called expletive negation (see Delfitto, 2020, for a recent review, and references therein), and expletive voice (Schäfer 2008).

From a generative perspective to the theory of grammar, expletive elements are problematic or, at least, exceptional, since they constitute counterexamples to Chomsky's Full Interpretation principle (Chomsky, 1986:98). In the present paper, we focus on an allegedly expletive category found in the nominal domain of Greek, namely the plural number of mass nouns (e.g., *nera* lit. water.PL 'a lot of/scattered water'). We argue that any analysis of expletiveness based on semantic redundancy or lack of pragmatic interpretation cannot appropriately account for their meaning. We present the results of an experimental study whose general goal was to investigate the interpretation that native speakers attribute to plural mass nouns in acts of communication. Based on linguistic evidence related to these phenomena, we conclude that the expletiveness of plural mass nouns must be captured in terms of expressive speech acts. We argue that this expletive category (i.e., plural number on a mass noun) is interpretable at a secondary level of interpretation, the level of Speech Act Semantics (Asher and Lascarides, 2001; Speas and Tenny, 2003; Reese and Asher, 2010; Krifka, 2020) and, specifically, Commitment Space Semantics (Cohen and Krifka, 2014; Krifka, 2015, 2017, 2019, 2020). Therefore, the term *expletive* and its derivatives are used throughout as purely descriptive labels, only in order to keep reference to the previous literature on the topic.

The rest of the article is organized as follows. Section 2 mainly instantiates the empirical part regarding mass nouns with plural morphology in Greek; after the presentation of the data and theoretical background, we describe in detail the experiments that were conducted and the obtained results. Section 3 introduces a novel analysis of Greek plural mass nouns following a speech act line and a commitment-based approach to the representation of meaning. Section 4 concludes the paper.

2. Greek plural mass nouns

2.1. The data

In Greek, nouns with mass denotation can be marked with plural morphology. As Tsoulas (2009) notes, in this case the mass noun may have various interpretations available: measure/serving reading (1a), type/kind reading (1b), idiomatic reading (1c) and a pure mass reading with specific nuances (1d). It is worth noting that, sometimes, the same mass noun (e.g., *nera* 'waters') can give rise to all four interpretations.

- (1) a. *Fere mas dhio nera se parakalo.*
bring us two water.PL you I.beg
'Bring us two waters, please.' (Meaning: two bottles of water)
- b. *Sto maghazi dhulevume mono dhio nera.*
at.the store we.work only two water.PL
'In our store we work only with two waters.' (Meaning: two kinds or brands of water)
- c. *Esasan ta nera tis Katerinas mes sto taxi.*
broke the water.PL the.GEN Katerina in at.the taxi
'Katerina's waters broke while she was in the taxi.'
- d. *Xalase to plindirio ke ghemise to banio nera.*
broke.down the washing.machine and was.filled the bathroom water.PL
'The washing machine broke down and the bathroom was filled with water.'

Notice that examples similar to (1a-c) could involve the plural form also in English (*waters*). That is, several number marking languages do allow mass nouns to take plural morphology in order to convey specific meanings. However, the case of (1d) is different. In the current study, we are interested only in this latter case and this is exactly what we will be referring to with the term *plural mass noun*, unless explicitly stated otherwise.

One thing that is special about Greek plural mass nouns is their allegedly restricted productivity. It has been pointed out that they most usually combine with a reduced class of predicates (e.g., *spray* or *load*-type predicates), that favor a big quantity reading of the mass noun (Alexiadou, 2011). Example (2a) shows that *nera* 'waters' can occur with the verb *stazo* 'to drip', conveying the additional meaning that a large amount of water dripped on the floor. By contrast, (2b) illustrates that with a verb such as *zesteno* 'to heat' it is anomalous to use a plural mass noun, as the symbol # indicates. Alexiadou claims that, in the

case of (2b), what causes the anomaly is that the situation described by the verbal predicate is incompatible with a *large amount* reading.

- (2) a. *Estaksan nera sto patoma.*
 dripped water.PL at.the floor
 ‘Water dripped on the floor.’
 b. *#Zestane nera ghia tsai.*
 heated water.PL for tea
 ‘He heated water to make tea’

Alexiadou (2011) further argues that the Greek mass nouns that can be pluralized form a semi-closed word group, as shown by the minimal pair in (3).

- (3) a. *Erikse nera sto saloni.*
 spilled water.PL at.the living.room
 ‘She spilled water in the living room.’
 b. *#Erikse ximus sto saloni.*
 spilled juice.PL at.the living.room
 ‘She spilled juice in the living room.’

The most relevant property for the present study of Greek mass plurals, though, is that they maintain their mass denotation despite their plural morphology, as suggested by the fact that they cannot cooccur with cardinals (Tsoulas, 2009). Note that the presence of *tria* ‘three’ in (4b) makes it impossible that a mass reading of *nera*, similar to the one in (4a), be obtained. There is only a measure/serving or type/kind interpretation available (cases (1a-b)), which however is also ruled out by the semantic context introduced by the verbal predicate.

- (4) a. *Stazun nera apo to tavani.*
 are.dripping water.PL from the ceiling
 ‘There is water dripping from the ceiling.’
 b. *#Stazun tria nera apo to tavani.*
 are.dripping three water.PL from the ceiling

In light of this type of data, and assuming a Linkian semantics for mass terms and plurals (Link, 1983; Chierchia, 1998), Tsoulas (2006:9) considers plural morphology on plural mass nouns as *expletive*. The denotation of a mass noun is a sublattice that contains both atoms and pluralities: a mass noun is lexically or inherently plural, and therefore it is unexpected that it be pluralized.² In other words, the closure under sum associated with morphological pluralization is semantically redundant on mass nouns. Now, if this is the case, the relevant questions that must be addressed are (i) why an expletive plural marking is possible at all on a mass noun in Greek, as shown in the previous examples, and (ii) what kind of meaning it adds on the mass noun.

2.2. Background

Concerning the first question, as noted in the literature, it raises a cross-linguistic challenge: what is it that distinguishes languages that allow plural mass nouns (e.g., Greek) from languages that do not (e.g., English) in examples such as (1d) above?³

² According to Link (1983) pluralization is not defined on the mass domain and, for Chierchia (1998), it is superfluous because mass nouns are already plural. See Borer (2005) for the hypothesis that all nouns have a mass denotation which can turn into a count denotation when they are merged in a specific syntactic structure that projects a Division Phrase and a Quantifier Phrase.

³ The possibility to pluralize mass nouns in Greek in the sense of example (1d) is sometimes treated as a typological exception. However, we note that similar observations have been made with respect to at least Persian (Sharifian and Lotfi 2003), Hebrew (Lunn 2016), Halkomelem (Wiltschko 2008), and Blackfoot (Wiltschko 2012) data. See also Erbach (2019), and references therein. Corbett (2000), in his typologically rich monograph on Number, mentions exactly this category of plural as a subcase of intensification plurals found in several languages.

Grammatical explanations of this cross-linguistic puzzle are forced to claim that in languages like English mass nouns carry invariably singular morphology and that plural morphology on mass nouns does not have its usual semantic import associated with atomicity: it obligatorily activates a shift to portion or kind readings. In languages like Greek on the other hand, plural marking is considered as fundamentally different, in the sense that the plural morpheme does not represent a plural operator PL , but a modifier (Tsoulas, 2009). It is because of this asymmetry that in Greek both count and mass nouns can surface with plural morphology.⁴

Under a different view, one might stipulate that all mass nouns in English are “coded as *singleton properties*, thereby making them semantically singular: they are true just of the totality of the instances of the properties” (Chierchia, 2015:16). In such languages, plural marking has its standard closing-atoms-under-sum function. Mass nouns with plural morphology are, thus, ruled out due to the clash between their semantics and the semantics of pluralization. By contrast, in languages like Greek, the distinction between the plural and the singular is weaker, in the following sense: there is no requirement that the respective operators (PL and SG) apply to stably atomic properties, to properties at which the atomic operator (AT) has already applied. Under such circumstances, nothing stops the pluralizer PL from applying on mass nouns.

Grammatical explanations reducing the cross-linguistic challenge to semantic, interpretational or combinatorial asymmetries of what surfaces as singular and plural morphology in the languages of the world can account for why in Greek, but not in English, plural mass nouns can pluralize but cannot combine with numerals. However, such explanations do not have much to say about the meaning associated with plural mass nouns in languages of the Greek type, as will become apparent in the course of the paper.

Rather than arguing that Greek number marking is different from that in English as do the above-mentioned approaches, Alexiadou (2011) (following Acquaviva, 2008) and Kouneli (2019) argue that Greek has specific *lexical plurals* that license an abundance or a spread/scattered reading. Although one might think that the advantage of this approach is that inferences are captured as encoded directly on the noun, our experiments show that the ‘much’ and the ‘spread/scattered’ inferences are not lexically constrained, and that the use of “lexical plurals” interacts with the speaker’s emotive stance (Goodwin et al., 2012) towards the situation (s)he is describing. Be that as it may, and leaving the interpretation of mass plurals for what comes next, this latter line of thinking can also explain the cross-linguistic distribution of plural mass nouns: if they are as idiosyncratic as individual lexemes, they are predicted to appear in some languages but not others.

Let us move on to our second question: what kind of meaning does plural marking add on a mass noun? The interpretation of plural mass nouns is neglected by traditional Greek grammars. However, it is done justice by the generative and formal semantics literature. As already mentioned, Tsoulas (2006) argues that plural morphology on mass nouns is redundant. He also observes (Tsoulas, 2006, 2009), though, that it gives rise to an *abundance* reading (like Alexiadou, 2011). In this sense, the difference between (5a) and (5b) is that only the latter conveys the meaning that there is a lot of water coming from the fridge.

- (5) a. *Trexí nero apo to psighio.*
is.running water from the fridge
‘There is water coming from the fridge.’
- b. *Trexun nera apo to psighio.*
are.running water.PL from the fridge
‘There is a lot of water coming from the fridge.’

The basic insight of Tsoulas and Alexiadou is extended and formalized in Renans et al., 2018.⁵ These authors acknowledge the abundance interpretation triggered by plural on mass nouns. They further notice that this interpretation does not arise when the plural mass noun, in their example below *zahares* ‘sugar.PL’, is embedded under negation, and thus ascribe to the abundance inference the status of a conversational implicature. Note that example (6) does not mean that the zebra did not drop a lot of sugar, but rather that it did not drop any sugar at all.

- (6) *Tis zebras dhen tis epesan zahares.*
the zebra not CL drop sugar.PL
‘The zebra didn’t drop sugar.’
(Renans et al. 2018:5, ex. (17))

⁴ See Alexopoulou et al. (2013) for the view that Number in Greek is a category that can contribute argumenthood and what is standardly considered as the main interpretative difference between singular and plural number is merely an implicature.

⁵ See also Kane et al. (2015).

Nevertheless, the phenomenon of plural mass nouns turns out to be far more complex. Kouneli (2019) brings to attention some data that seem to contradict or, at least, doubt the exhaustivity of the *abundance* analyses. Consider (7).

- (7) a. *I katsarola exi nero.*
 the saucepan has water
 ‘There is water in the saucepan.’
- b. *I katsarola exi nera.*
 the saucepan has water.PL
 ‘There is water in the saucepan.’

As Kouneli observes, although the two examples seem to be semantically equivalent, the first one is more likely to be used when there is enough water to cook something in the saucepan, while the second is used when there are just drops of water sprinkled in the saucepan. This difference motivates her claim that plural morphology on Greek mass nouns does not (always) give rise to an *abundance* interpretation, but to an *unorderly scattered* reading (Kouneli, 2019). Note that, in the case of (7b), the plural is used even though no abundance implicature is expected to be inferred, because the amount of water being referred to is estimated to be smaller than in (7a).

This suggests that, beyond an unexpected plural morphological marking, which on purely semantic/grammatical terms should be linked to expletiveness or to a stipulation on the syntax and semantics of PL, at least two different interpretations have been associated with plural mass nouns: an *abundance* reading and an *unorderly scattered* reading. While a comparison between examples (5) and (7) creates the impression that the two interpretations available stem from contradictory analyses, a compromise of the two has been shown to be possible.

Specifically, Erbach (2019) is the first one to attempt a holistic analysis of the interpretation of plural mass nouns. Building on Tsoulas' and Kouneli's seemingly opposing insights, he argues that plural morphology on mass nouns indicates that the amount of the noun referent is exceeding a contextually supplied standard. According to Erbach, when the plural function is applied over an individuation operator, a measure function introduced by plural is translated into counting. On the other hand, when it is applied directly to a non-countable noun,⁶ contextual restrictions apply in the sense that a context sensitive measure function translated as a measure for magnitude is introduced. If mass nouns are measured for magnitude (i.e., size/extent), the notion of spread/scatteredness is captured (Kouneli, 2019). If this magnitude is exceeding a contextual standard, the abundance inference can be also accounted for (Tsoulas, 2009). However, Erbach prefers not to take this latter step.

Under closer inspection, Erbach's analysis makes further claims regarding the grammatical vs. lexical status of Greek mass plurals. Attributing the spread/scattered reading to the magnitude measure function introduced by plural on mass nouns, he implicitly claims that Greek scatteredness plurals are grammatical plurals. While he could claim the same for the abundance inference under the same reasoning, he chooses another alternative: Contrary to scatteredness plurals, abundance plurals are lexical. Such a proposal can capture the fact that the latter are much more frequent cross-linguistically (consider e.g., the *waters* of a lake, a sea or an ocean). It also predicts that they are less productive than scatteredness plurals.

To sum up, this subsection has shown that the question regarding the (un)availability of plural morphology on nouns with mass denotation is interrelated with the one concerning the interpretative import of this “expletive” plural. In the present paper we mainly focus on the latter and make claims on the former only insofar as the results of our experimental study allow us to. Before we move on to the details of this study, we present our working hypothesis.

2.3. Working hypothesis

We hereby set out to provide solid arguments to discard or redefine the postulated redundancy of Greek mass noun plurals (Tsoulas, 2006). Our working hypothesis is that plural morphology on Greek mass nominals does have an impact on the interpretation of the phrase or the utterance in which these nominals are embedded.

⁶ Erbach builds on Chierchia's (2015) idea that, in languages like Greek, plural number can without problems combine with both count and mass nouns, since PL does not need to be applied over AT.

In accordance with the preceding background discussion, we hold the general hypothesis that plural on Greek mass nouns is not expletive. We take a step forward in attempting a unifying analysis of Greek mass plurals. This attempt is motivated by both theoretical and empirical considerations. Regarding the former, a common analysis for abundance and scatteredness plural mass nouns is more economical and, thus, theoretically desirable. Concerning the latter, two empirical observations need to be highlighted.

First, utterances involving singular mass nouns can also convey abundance and scatteredness readings by other linguistic means; see the example pairs in (8) and (9), respectively.

(8) a. *Espase o solinas ke o kipos ghemise nero.*
broke the tube and the garden was.filled water

b. *Espase o solinas ke o kipos ghemise nera.*
broke the tube and the garden was.filled water.PL
'The tube broke and the garden was flooded.'

(9) a. *Afisa ti mikri ghia ena lepto ke pasaliftike me ghiaurti.*
I.left the small for one minute and she.got.daubed with yogurt

b. *Afisa ti mikri ghia ena lepto ke pasaliftike me ghiaurtia.*
I.left the small for one minute and she.got.daubed with yogurt.PL
'I left the kid for a minute and she got daubed with yogurt.'

Notice that the presence of *ghemizo* 'be filled' and *pasalivome* 'be daubed' would render the plural morphology on the mass noun, in (8b) and (9b) respectively, redundant, if abundance and scatteredness were all that there is to its interpretation.

Even more intriguing is the observation that intended abundance and scatteredness readings fail to license plural morphology on Greek mass nouns when the situation is such that it does not cause the dislike of the speaker. Compare (10) and (11) with the previous examples (8) and (9).

(10) a. *Epitelus evrekse ke i dheksameni ghemise nero.*
at.last it.rained and the tank was.filled water

b. *#Epitelus evrekse ke i dheksameni ghemise nera.*
at.last it.rained and the tank was.filled water.PL
'At last it rained and the tank was filled with water.'

(11) a. *Pasalipsa tin plati tu me ghiaurti ghia na ton anakufiso apo to kapsimo.*
I.daubed the back his with yogurt for to him relieve from the sunburn

b. *#Pasalipsa tin plati tu me ghiaurtia ghia na ton anakufiso apo to kapsimo.*
I.daubed the back his with yogurt.PL for to him relieve from the sunburn
'I daubed his back with yogurt to relieve him from the sunburn.'

Plural mass nouns are not acceptable in (10) and (11), even though they involve the same noun and predicate as examples (8) and (9), respectively. This suggests that, abundance or scatteredness inferences aside, there is some part of the interpretation of plural mass nouns that interacts with context and, specifically, with the speaker's emotional stance towards the

situation of utterance. We believe that the dislike of the speaker towards the situation described by the utterance containing the mass plural is key to formulating a unifying account of the meaning of plural morphology on Greek mass nouns.⁷

Building critically on the previous analyses and taking into serious consideration the data points brought to attention, we formulate our specific research hypothesis as follows: Plural morphology on Greek mass nouns is not expletive. Speakers of Greek use plural mass nouns when they feel *dislike* towards the situation described, independently of whether an abundance or a spread/scattered reading might be inferred from this situation.

To test the above hypothesis, we address the question of what kind of meaning plural marking adds to a mass noun by investigating in what sort of contexts a Greek speaker would use a plural mass noun. We predict that the distinction between an abundance vs. a spread/scattered reading does not correlate directly with the singular vs. plural mass noun distinction.

In the next section we present in detail the experimental study we conducted to get empirical arguments confirming or disproving the hypothesis just presented.

2.4. Experimental study

In order to obtain linguistic evidence in support of our research hypothesis, we designed a perception-interpretation experiment and a production experiment. Both of them aimed to test whether plural mass nouns are preferred in what can be considered as dissatisfactory contexts, that is, in situations towards which the speaker feels an emotion of *DISLIKE*. They also aimed to test the extent to which the abundance vs. scatteredness inferences interact with the singular vs. plural distinction.

2.4.1. Experiment 1

Experiment 1 was a perception experiment based on an acceptability judgment task. It aimed at confirming the hypothesis that the interpretation of Greek plural mass nouns is associated with circumstances under which the speaker considers that the magnitude of the substance denoted by the noun exceeds a contextually supplied standard and, therefore, feels *DISLIKE* towards these particular circumstances. It further aimed to test whether there is any correlation between the *abundance* (Tsoulas, 2006; Alexiadou, 2011) vs. *spread/scatteredness* (Kouneli, 2019) reading of the mass noun and the choice of plural over singular morphology.

2.4.1.1. Method. To this double end, the Number (Singular vs. Plural) distinction was checked against Context (Neutral vs. Dissatisfactory) and Meaning (Abundance vs. Scatteredness).

Participants were shown a number of small written texts. Each text consisted of a situation description and two alternative follow-ups. We asked participants to rate the naturalness of each follow-up, taking into account its respective description. The survey was administered via SurveyGizmo.

2.4.1.2. Participants. A total of 91 participants voluntarily took part in Experiment 1. Having excluded 14 partial participations, we report the responses of 77 participants (28 males, 49 females; mean age 28.20 years, SD = 7.63) in the results section. They were all native speakers of Greek and 94.8% of them reported that their daily use of Greek exceeded 50% (see the [Appendix](#) for details). The participants were recruited via social media platforms such as Facebook.

2.4.1.3. Materials. For the materials of Experiment 1 a list of 12 mass nouns was used: *ladhi* 'oil', *sokolata* 'chocolate', *rizi* 'rice', *kafes* 'coffee', *alevri* 'flour', *laspi* 'mud', *nero* 'water', *ximos* 'juice', *zaxari* 'sugar', *xrisoskoni* 'glitter', *saltsa* 'sauce', *ghala* 'milk'. Each one of these nouns, both in its singular and its plural form, appeared as part of a verbal reaction to one single context from which the dissatisfaction of the speaker could be inferred (dissatisfactory context) and one single context from which no such inference could be drawn (neutral context), giving rise to a set of 24 experimental items. The Meaning parameter was introduced in such a way that half of the dissatisfactory contexts and half of the neutral contexts favored an abundance reading of the mass noun. The remaining halves favored a scatteredness reading.

The interaction of the Context and Meaning parameters created four types of situations: a) neutral-abundance, b) neutral-scatteredness, c) dissatisfactory-abundance and d) dissatisfactory-scatteredness. We controlled for both Context and Meaning by manipulating the vocabulary and contextual information. To put this concretely, dissatisfaction was mainly conveyed by negatively charged emotive expressions, psych-predicates and explicit statement of undesirable emotional states. On the contrary, neutrality was inferred from their absence. At times, it was reinforced by interjections showing serenity. As for scatteredness, it was mostly conveyed by adverbials meaning 'all over the place/in different places' or *spread*-type predicates. For abundance, quantity and measure expressions meaning 'a lot' as well as verbs meaning 'fill' were used. Let

⁷ Recall that the role of context is present already in [Erbach \(2019\)](#), who however does not make any specific claim on the issue.

us make all this clearer with some examples from the item list, translated into English (see the [Appendix](#) for the complete list of items).

(12) Dissatisfactory-scatteredness:

[You take the salad you prepared for dinner and sit comfortably on your sofa to enjoy your favorite movie. You stretch to reach the remote. You instantly regret it because somebody has stained it with oil in different spots. Your tranquility is gone.]

The explicit statement that tranquility is gone makes (12) a transparently dissatisfactory situation. The adverbial *in different spots* triggers the inference that the oil is scattered.

(13) Dissatisfactory-abundance

[You are finally home from the super-market. The bags were too heavy but now everything seems fine...until you realize that the 1-liter tomato juice jar opened inside the bag. There goes serenity.]

In (13) again serenity leaves the place, and the situation becomes dissatisfactory. The quantity specification (*1-liter*) suggests that an abundance reading of the juice is intended.

(14) Neutral-scatteredness

[After the last Masterchef season, you and your friend think that you can reproduce a Michelin dish. Your first victim is a sweet tart. It is time to decorate the plate with melted chocolate.]

Notice that there is nothing in the situation described in (14) that could cause the dissatisfaction of the people involved: some friends are making a dessert. It is a neutral situation. The additional information that melted chocolate will be used to *decorate* the plate favors a scatteredness over an abundance reading of the noun.

(15) Neutral-abundance

[The big fountain you bought from that Feng Shui store is already in front of an eastern window. You take a sit in your energy-cleansed living room and enjoy.]

In (15) a *big fountain*, suggesting that there is a lot of water, is being enjoyed. This is a representative example of what we considered as a neutral situation, conveying an abundance inference regarding the mass noun.

We expected that a plural mass noun would receive higher rating as part of a reaction to the dissatisfactory situations described in (12) and (13) than as part of a reaction to the neutral situations in (14) and (15). We predicted no significant difference between (12) and (13), on the one hand, and (14) and (15), on the other, since we took the abundance vs. scatteredness distinction as orthogonal to the singular vs. plural distinction, as regards mass nouns in Greek.

The following instructions were given to participants: “In what follows, you will read a set of small texts. Each text consists of a brief description of a situation and two possible verbal reactions to this situation. Below every reaction, a scale from 0 to 100 will appear on your screen. We ask you to use that scale to rate how natural each reaction seems, given the respective situation (0 = totally unnatural, 100 = absolutely natural).”



All participants rated the total of items, producing 48 ratings each (2 Numbers [singular, plural] × 2 Contexts [neutral, dissatisfactory], × 2 Meanings [abundance, scatteredness] × 6 communicative situations). A total of 3,696 responses (77 participants × 48 ratings) were statistically analyzed.

2.4.1.4. Procedure. Participants were asked to read the instructions and complete a questionnaire concerning their sociolinguistic background (see the [Appendix](#)). Once the questionnaire was completed, the main task started, which consisted of reading the description of a situation and two sentences and evaluating how natural each of these sentences was with respect to the situation. It was not a forced-choice task, since participants were free to respond that both the singular and the plural mass noun were equally natural in the same situation, that only one of them was, or that none of them was.

Both the order of items and the order of the singular and plural reactions within the items were randomized. Every item consisted of the description of a situation, that appeared in square brackets, and two possible verbal reactions to this situation, each followed by a rating scale. Below we give an example of what participants saw in their computer screens, translated into English.

(16) [You gave your little sister a piece of chocolate. The chocolate that didn't make it to her mouth is now on the rest of her face. You want to clean her before your mother sees that, because you are really scared of the moment your mother finds out what you give her when you are alone.]

totally unnatural: 0 absolutely natural: 100

- a. Come here quickly 
 - to swipe off the chocolate!
- b. Come here quickly 
 - to swipe off the chocolates!

The median duration of the experiment was 10' 20".

2.4.1.5. Results. Fig. 1 shows the results of Experiment 1 as a function of Number (Singular, Plural), Context (Neutral, Dissatisfactory), and Meaning (Abundance, Scatteredness). The two values of Number appear on top of the graph, whereas the x axis presents the neutral vs. dissatisfactory contextual division. For each Number and Context combination, the graph provides the mean acceptability ratings for the two potential readings available, either abundance or scatteredness.

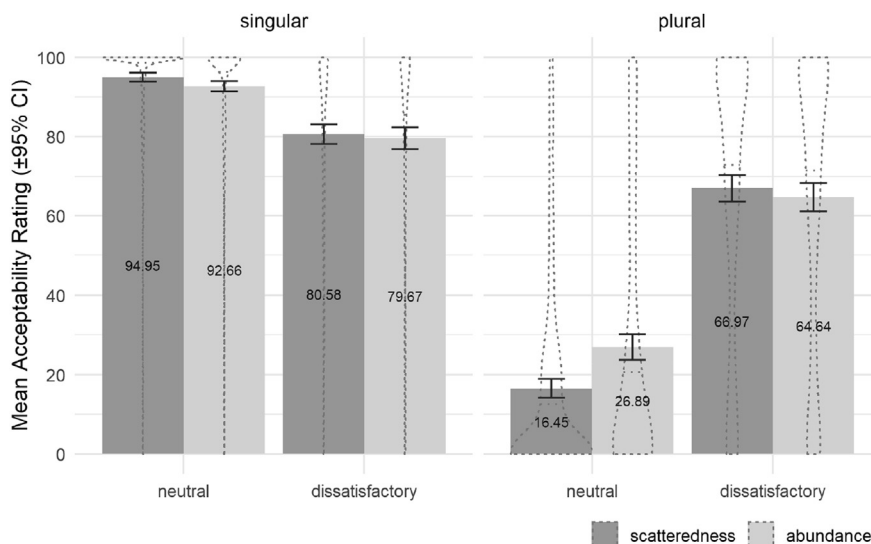


Fig. 1. Results of Experiment 1: Number × Context × Meaning.

Each bar represents the mean acceptability rating, which is also displayed numerically, and error bars display the confidence interval at 95%. In addition, a set of dotted-contour violin plots show the underlying distribution of the data and the location of the median value. This figure shows that singular responses received higher ratings than plural responses overall. Plural mass nouns are preferred in dissatisfactory contexts, whereas singular mass nouns are preferred in neutral contexts. Few differences regarding Meaning are observed, with an apparent effect only for plural constructions in neutral contexts, which was proved to be not significant after running a statistical analysis.

The data obtained were analyzed using the *glmmTMB* package in R. A series of linear mixed-effects models using different random effects structures were performed, from the most complex random effects structure to a model with only subject as a random intercept. All structures providing no model converge problems were compared using the function *compare_performance* from the *performance* package to identify the model that best fitted our data. In the reports below, the omnibus test results are provided plus the output of a series of pairwise tests performed with the *emmeans* package, which include a measure of effect size by using Cohen's *d*.

For the analysis of the results Number, Context, Meaning and all their possible interactions were set as fixed factors. Random slopes for both Context and Meaning by Subject plus a random intercept for Item were included in the model.

Two main effects and one paired interaction were found to be significant: the main effects of Number and Context, and the interaction Number \times Context. The main effect of Number, $\chi^2(1) = 186.716$, $p < .001$, indicates that singular constructions were generally preferred to plural ones (Cohen's $d = 1.79$, $p < .001$). The main effect of Context, $\chi^2(1) = 21.907$, $p < .001$, is related to the fact that dissatisfactory contexts were generally more accepted than neutral ones ($d = 0.64$, $p < .001$).

The paired interaction Number \times Context, $\chi^2(1) = 82.873$, $p < .001$, can be better interpreted looking at Context as the contrast field: when singular constructions are used, neutral contexts are preferred to dissatisfactory ones ($d = 0.55$, $p = .003$), whereas, when plural constructions are used, dissatisfactory contexts are preferred to neutral ones ($d = 1.83$, $p < .001$). When looking at Number as the contrast field, singular constructions are preferred against plural ones in the two contexts analyzed, though the effect is greater in neutral contexts ($d = 2.98$, $p < .001$) than in dissatisfactory ones ($d = 0.60$, $p = .001$).

No effect concerning Meaning was found to be significant. A final glimpse to the pairwise contrasts found for the non-significant triple interaction would indicate that the preference for singular constructions over plural ones would not be equally found for any combination of Context and Meaning. Neutral-Scatteredness situations would display a great difference ($d = 3.24$, $p < .001$), followed by Neutral-Abundance situations ($d = 2.72$, $p < .001$); the effect would be clearly smaller for Dissatisfactory-Abundance situations ($d = 0.63$, $p = .016$) and for Dissatisfactory-Scatteredness situations ($d = 0.56$, $p = .031$). Though visible in the bar graph above, the difference regarding Meaning in neutral plural constructions was not found to be significant ($d = 0.42$, $p = .107$).

2.4.2. Experiment 2

Experiment 2 was a production experiment based on an elicitation task. Its goal was to test the hypothesis that the production of Greek plural mass nouns is sensitive to the speaker's emotive stance towards the situation being described. More specifically, it sought to confirm that the speaker uses a plural mass noun when (s)he feels *DISLIKE* with respect to that particular situation. As did Experiment 1, Experiment 2 further aimed at testing whether there is any correlation between the *abundance vs. spread/scatteredness* reading of the mass noun and the choice of plural over singular morphology.

2.4.2.1. Method. To achieve the above goals, we tested again the singular – plural distinction against the neutral vs. dissatisfactory context distinction and the abundance vs. scatteredness reading distinction. We used the same four types of situations that were used in Experiment 1: neutral-abundance, neutral-scatteredness, dissatisfactory-abundance and dissatisfactory-scatteredness. However, this time the situations were used to elicit from the participants either the singular or the plural form of the mass noun.

The participants of Experiment 2 were presented with pictures displaying text conversations that were suddenly stopped. They were asked to complete each conversation so that it made sense, using a small number of words. This survey was also administered via SurveyGizmo.

2.4.2.2. Participants. Initially, there were 199 volunteers for Experiment 2. However, 57 of them failed to complete the task. Therefore, we present in the results section the responses of 142 participants (35 males, 107 females; mean age 34 years, $SD = 10$). All participants had Greek as their native language and 72.53% of them reported that their daily use of Greek was higher than 50% (see the [Appendix](#) for details). The participants were recruited via Facebook and other social media platforms.

2.4.2.3. Materials. The design used for the materials of Experiment 2 was similar to the one used for Experiment 1. We created 12 neutral contexts that aimed at eliciting the singular form of the following mass nouns: *amos* 'sand', *kapnos* 'tobacco', *krasi* 'wine', *krema* 'cream', *ksidhi* 'vinegar', *skotadhi* 'darkness', *ema* 'blood', *alati* 'salt', *ghiaurti* 'yoghurt', *laspixoma* 'mud/soil', *staxti* 'ash', *psomi* 'bread'. We further created 12 dissatisfactory contexts that had as targets the plural forms of the same group of mass nouns. This brought our experimental items to a total of 24 (see the [Appendix](#)). Finally, we introduced the Meaning parameter. As in Experiment 1, half of the neutral contexts and half of the dissatisfactory contexts favored an abundance reading of the mass noun. The rest of the contexts favored a scatteredness reading. All contexts were presented in the form of Internet chat conversations that were abruptly stopped, with at least one word obviously missing.

Dissatisfactory vs. neutral and scatteredness vs. abundance situations were understood in the way described earlier for Experiment 1: we controlled for these distinctions in the situations we provided by managing the vocabulary and discourse

information. The only difference was that, for Experiment 2, we also used emoticons to convey the emotional state of the person involved.⁸ Let us illustrate how this latter detail worked with a couple of translated examples from the item list.

- (17) I have an idea! 😊 🍷 We will make glühwein. Remember? What we were drinking in Berlin last year. 🍷 There are 5 liters of Mavrodafni [type of wine] in the fridge. In 5 mins I will be there with the herbs. You empty into the pot...
Target answer: the wine

The smiling and loving emoticons in (17) made it clear that the situation described was far from dissatisfactory and, thus, it was considered as neutral. It is noted in passing that the *5-liter* measure phrase favored an abundance reading of the wine.

- (18) Tell me something, this morning did you shave or just slaughter yourself in the bathroom? 😡😡😡 All along the mirror there...
Target answer: were bloods

Example (18), on the contrary, described a dissatisfactory situation as suggested by the upset emoticons and the presence of the verb *slaughter*. The adverbial *all along the mirror* showed that a scatteredness inference related to blood was intended.

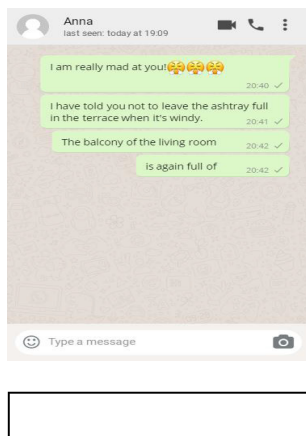
Given our research hypothesis (see Section 2.3), the singular form for ‘wine’ was predicted to be produced as a continuation of (17). On the other hand, the dissatisfactory situation in (18) was expected to trigger the use of the plural of the mass noun for ‘blood’. As for the distinction abundance vs. scatteredness, we predicted that it would not interact significantly with the choice between the singular and the plural form of the mass noun.

We gave participants the following instructions: “In what follows, a set of images will be presented to you. The images come from Internet chat conversations that were abruptly stopped. We ask you to use the space that you will find under each image to complete the stopped conversations, using in each case one to three words.”

Each participant produced 24 responses. A total of 3,408 responses (142 participants × 24 answers) were statistically analyzed.

2.4.2.4. *Procedure.* Participants completed Experiment 2 using their own computers. First, they read the instructions. Then, they were asked to fill in a sociolinguistic questionnaire (see the [Appendix](#)). The main task started right after the questionnaire was over. Participants were presented with different randomized versions of the 24 experimental items. Each item consisted of an image⁹ displaying an incomplete text conversation and a blank space where the participant was asked to write her/his answer. Below an example of what participants were shown is provided, translated into English.

(19)



After reading the conversation fragment displayed in the image, participants had to use the blank space that appeared right below to write up to three words that would complete the conversation. We were only interested in the singular or plural noun used as part of the participants' answer.

⁸ We thank Andreas Trotzke for the suggestion.

⁹ The images were created using the free software provided in the following platform: <https://www.fakechatapp.com/>.

The median duration of the experiment was 14' 13".

2.4.2.5. Results. The results of Experiment 2 are shown in Fig. 2. Participants' responses were classified as follows:

- (20) a. sands, tobaccos, wines, creams, vinegars, darknesses, bloods, salts, yoghurts, muds/soils, ashes, breads
- b. sand, tobacco, wine, cream, vinegar, darkness, blood, salt, yoghurt, mud/soil, ash, bread
- c. stains, sprinkles, particles, drops, pieces, crumbles, pebbles, seeds, leaves, cigarettes, garlics, and similar
- d. oil, lemon, night, flour, moisturizer, cement, anti-age cream, litter, butter, smell, lemon juice, filter, and similar
- e. smell (verb), candy, baking paper, bake, newspapers, help (verb), tablecloth, towel and other nonsensical answers

These different groups appear in different colours in the graph and are codified in the following way:

- (21) a. target-plural mass nouns (red)
- b. target-singular mass nouns (blue)
- c. plural nouns (light red)
- d. singular nouns (light blue)
- e. other (white)

Fig. 2 shows the distribution of these answer-groups in the four conditions created by the interaction of Context (Neutral, Dissatisfactory) and Meaning (Abundance, Scatteredness), which are presented in the x-axis. The figure shows that the use of plural constructions is more frequent in dissatisfactory contexts compared to neutral contexts (columns 3–4 vs. 1–2). Singulars are preferred in almost all contexts, except for those dissatisfactory contexts that further convey scatteredness (column 4). Also, more plurals are used conveying scatteredness than abundance meanings (column 2 vs. 1, 4 vs. 3, 2–4 vs. 1–3). Sticking to target answers, while the production of mass singulars is higher in neutral contexts, the production of mass plurals is higher in dissatisfactory contexts (columns 1–2 vs. 3–4). In the case of neutral contexts, mass plurals are almost irrelevant, with the additional comment that more plurals are produced in those neutral contexts that favor a scatteredness interpretation than the ones favoring abundance readings (column 2 vs. 1).

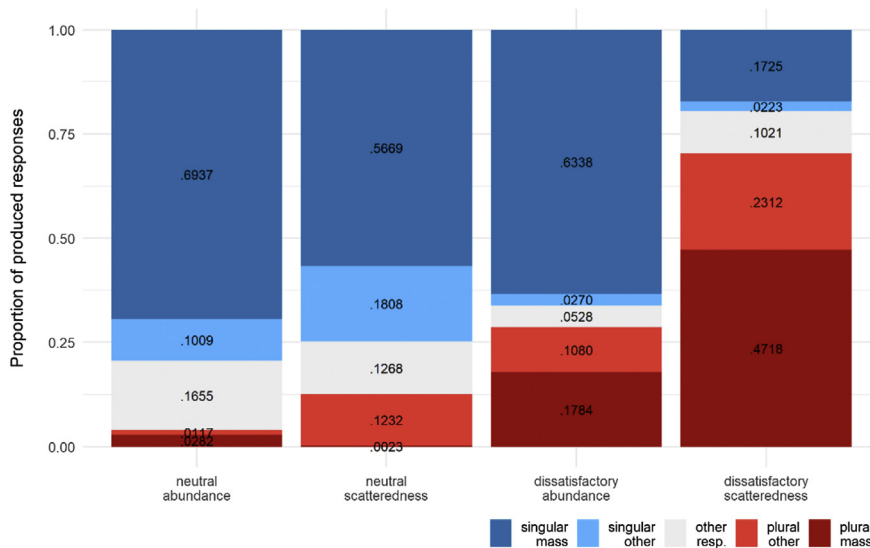


Fig. 2. Results of Experiment 2: Number × Context × Meaning.

The *glmmTMB* package in R was used for the analysis of the participants' responses (see the results section of Experiment 1 for details). Two separate analyses were conducted. The first one included only those responses in which mass nouns were obtained (red and blue), and the second one included all responses classifiable in terms of grammatical number (red, blue, light red, light blue). In both analyses, the dependent variable was Plural, which follows a Binomial distribution (in which 0 indicates that a singular form had been produced and 1 indicates that a plural form had been produced).

As for the first level of analysis, Context, Meaning and their interaction were set as fixed factors. A random intercept for Subject plus a random intercept for Item were included in the model.

All fixed effects were found to be significant. The main effect of Context, $\chi^2(1) = 136.093, p < .001$, indicates that plurals are more produced in dissatisfactory contexts than in neutral contexts (*Cohen's d* = 5.35, $p < .001$). The main effect of Meaning, $\chi^2(1) = 37.468, p < .001$, indicates that plurals were more produced in association with scatteredness than with abundance readings ($d = 1.22, p = .008$).

The paired interaction Context \times Meaning, $\chi^2(1) = 40.203, p < .001$, can be interpreted in two complementary ways. First, the preference for producing plurals in dissatisfactory vs. neutral contexts is more than the triple when scatteredness is involved ($d = 8.24, p < .001$) than when abundance is involved ($d = 2.46, p < .001$). Second, when looking at Meaning as the contrast field, in dissatisfactory contexts, mass plurals are again more frequent in association with scatteredness than with abundance ($d = 4.11, p < .001$); however, in neutral contexts, mass plurals are more frequent in association with abundance than with scatteredness ($d = 1.67, p = .033$).

On the second level of analysis, Context, Meaning and their interaction were set as fixed factors. A random intercept for Subject plus a random slope for Meaning by Item were included in the model.

All fixed effects were found to be significant. The main effect of Context, $\chi^2(1) = 257.886, p < .001$, indicates that plurals are more produced in dissatisfactory contexts than in neutral contexts (*Cohen's d* = 3.41, $p < .001$). The main effect of Meaning, $\chi^2(1) = 8.434, p = .004$, indicates that plurals were more produced in association with scatteredness than with abundance readings ($d = 2.20, p = .010$).

The paired interaction Context \times Meaning, $\chi^2(1) = 26.127, p < .001$, can be interpreted in two complementary ways. First, the preference for producing plurals in dissatisfactory vs. neutral contexts is almost the double for scatteredness ($d = 4.38, p < .001$) than the one that is found for abundance ($d = 2.44, p < .001$). Second, when looking at Meaning as the contrast field, in dissatisfactory contexts, plurals are more frequently associated with scatteredness than with abundance ($d = 3.17, p < .001$), though they are not significantly different in frequency in neutral contexts ($d = 1.23, p = .168$).

2.5. Discussion

Wrapping up the results obtained, both experiments reveal that the use of plural mass nouns does have an impact on the interpretation of the utterance in which these nominals appear, supporting the no-real-expletiveness proposal already put forth by various researchers (Tsoulas, 2009; Alexiadou, 2011; Renans et al., 2018; Kouneli, 2019).

The novelty of our study is that not only does it support the conclusion that context accessibility is relevant for an appropriate interpretation and production of plural mass nouns (Erbach, 2019), but most importantly it also shows that plural mass nouns are preferred when the speaker feels dislike towards the contextual setting, suggesting that mass plurals are expressive variants of their singular counterparts.

As was mentioned in Section 2.2, Erbach (2019) was the first to highlight the role of context in licensing the emergence of plural morphology on Greek mass nouns. However, he left unanswered the question regarding the exact identity of this context, leaving what he calls the contextual challenge for future research. Looking closely into the data, we came up with the specific idea that plural mass nouns arise in those contexts where the magnitude of the substance denoted by the noun exceeds a contextually fixed standard, in this way causing the dislike of the speaker.

As for the distinction between an abundance or a scatteredness reading of the mass noun, recall that our hypothesis was that it might not correlate directly with the singular vs. plural mass noun distinction. Although this was clearly confirmed by Experiment 1, Experiment 2 suggested that scatteredness might push the speaker's choice even more towards the plural. Our initial hypothesis with respect to this topic was confirmed, to the extent that Context and not Meaning was found to be the main regulating factor of native speakers' choice between the singular or the plural form of a mass noun. However, note that both the acceptability judgment task and the elicitation task are compatible with Erbach's (2019) conclusion that the scattered reading is grammatically based, since it is the one for which the highest ratings are obtained. This shows that there might indeed exist some deeper asymmetry between abundance and scatteredness mass plurals, despite the fact that the use of both categories is ultimately regulated by context.

A final comment is in order: it was mentioned in Section 2.1 that, according to some previous studies in the literature, plural mass nouns are characterized by limited productivity, since they constitute a semi-closed noun class and most usually cooccur with a certain type of predicates. In Experiments 1 and 2 several mass nouns were used and speakers were willing to pluralize almost all of them. This might suggest that they do not constitute such a restricted word class after all, and that, given appropriate contextual information, all substance-denoting nouns (see our list of target plural mass nouns in (20a)) can emerge with plural morphology to convey the dislike of the speaker at the level of utterance interpretation.

3. Analysis

In order to account for the results of our experimental study we postulate that Greek plural mass nouns are expressive variants of their singular counterparts. The expressivity of plural mass nouns is manifested in their being preferred in contexts that trigger the dislike of the speaker (conveying either scatteredness or abundance of the substance denoted by the mass noun). The issue that needs to be addressed next is exactly how this expressivity of Greek plural mass nouns should be captured. To pursue this goal, one needs to look into what a speaker can and cannot do with an utterance that contains a mass plural, at the same time paying attention to how s(he) does it.

Let us take as our example the utterance in (22), which formed part of one of our experimental items.

- (22) *I tsanda ghemise saltses.*
 the bag was.filled sauce.PL
 ‘The bag got full of tomato juice.’

Example (22) is associated with two pieces of information: (i) the bag got full of tomato juice, and (ii) the speaker feels dislike towards the situation described in (i). The next step is to evaluate what the status of both (i) and (ii) is. Consider first (23).

- (23) *#I tsanda ghemise saltses ala dhen iparxi saltsa edho ghira.*
 the bag was.filled sauce.PL but NEG exists sauce here around
 ‘The bag got full of tomato juice but there is no tomato juice around here.’

This example shows that the proposition concerning the bag being full of tomato juice is an asserted proposition whose entailment, namely the presence of tomato juice in the bag, cannot be cancelled; it corresponds to the proffered, descriptive content or *at-issue* meaning (Potts, 2007).

Concerning the information in (ii), we have to consider several possibilities. Notice, to begin with, that this information does not contribute to the truth conditions of the asserted proposition. In other words, the emotive stance of the speaker is not part of the proffered content. Second, (ii) is not associated with a specific lexical item, as would be expected from a conventional implicature (Grice, 1989). It cannot be associated with the plural morpheme either, since that would predict that plural morphology systematically triggers (ii) also on count nouns, contrary to fact. Third, (ii) cannot be cancelled, as would be the case if it were a conversational implicature.

- (24) *#I tsanda ghemise saltses ala mu arese afto.*
 the bag was.filled sauce.PL but me liked this
 ‘The bag got full of tomato juice but I liked it.’

Given the previous discussion, one might postulate that the information in (ii) is a presupposition, pragmatically implicated material that cannot be cancelled. However, several factors allow us to argue against this hypothesis: the emotive stance of the speaker cannot be considered ‘old’ information (vs. the truth conditional content, which is ‘new’), the information regarding the emotive stance of the speaker does not correspond to shared beliefs between speaker and addressee (Stalnaker, 1974) (i.e., it is not entailed by the *common ground*), and it does not project. If (22) is negated, it becomes compatible with *eftixos* ‘fortunately’, meaning that (ii) is no longer present. See the contrast in (25).

- (25) a. *#Eftixos i tsanda ghemise saltses.*
 fortunately the bag was.filled sauce.PL
 ‘Fortunately, the bag got full of tomato juice.’
 b. *Eftixos i tsanda dhen ghemise saltses.*
 fortunately the bag NEG was.filled sauce.PL
 ‘Fortunately the bag didn’t get full of tomato juice.’

The conclusion should be that the information in (ii) cannot be a presupposition either. This being the case we would like to postulate that the two pieces of information in (i) and (ii) are both *at-issue*, exemplifying however different types of *at-issueness* (descriptive information in the case of the former, and expressive information in the case of the latter). Our analysis of (22) goes as follows: this utterance should be related to the performance of two different speech acts. The first one is an assertion of the proposition corresponding to the bag being full of tomato juice (i). The second act somehow introduces the

speaker's DISLIKE (ii). While the former is more easily formulated by means of an overt performative, the expressive act can also materialize as explicitly performative.

(26) Q: *Ti eghine?*

what happened

‘What happened?’

A: *Dhio pragmata. Tha su po. Se pliroforo oti i tsanda ghemise saltses*

two things will you I.say you I.inform that the bag was.filled sauce.PL

ke su ekfrazo ti disareskia mu pu i tsanda ghemise saltses.

and you I.express the dislike mine that the bag was.filled sauce.PL

‘Two things. I will tell you. I inform you that the bag got full of tomato juice

and I express my dislike for the bag being full of tomato juice.’

The addressee can try to change the speaker's emotive stance, but (s)he cannot object to it being the case at the time of communication. See the contrast in (27) and (28).

(27) - *I tsanda ghemise saltses.*

the bag was.filled sauce.PL

‘The bag got full of tomato juice.’

- *Kala, iremise. Tha tin plinume.*

ok calm will it we.wash

‘Ok, calm down. We will wash it.’

(28) - *I tsanda ghemise saltses.*

the bag was.filled sauce.PL

‘The bag got full of tomato juice.’

- *#Omos su arese afto.*

but you liked this

‘But you liked it.’

The conclusions we have reached based on the results of our experimental study and the conversational potential that an utterance containing a Greek plural mass noun establishes need to be formalized. To this aim, we implement a Speech Act Semantics analysis, in line with the work in Krifka (2017, 2019, 2020). We further specifically assume from Krifka (2020) that the illocutionary force of assertive sentences is structured in three different layers: “a judgement phrase [JP], representing subjective epistemic and evidential attitudes; a commitment phrase [ComP], representing the social commitment related to assertion; and an act phrase [ActP], representing the relation to the common ground of the conversation” (Krifka, 2020:1). We extend this three-layer structure to expressive speech acts, with the addition that, apart from epistemic and evidential judgments, these speech acts can also involve emotive judgments.

Now we have our basic tools in place. The interpretation of (22) is given in (29).¹⁰

(29) [ActP [Act ASSERT] [ComP [Com ⊢] [JP [J J-] [TP *i tsanda ghemise saltses*]]]] &

[ActP [Act EXPRESS] [ComP [Com ⊢] [JP [J J:DISLIKE] [TP *i tsanda ghemise saltses*]]]]

In words, (29) says that uttering (22) triggers the performance of an assertion through which the speaker publicly commits to the truth of her/his private judgment that the proposition ϕ denoted by *i tsanda ghemise saltses* is true. It further triggers the performance of an expressive speech act via which the speaker publicly commits to an emotive judgment ψ expressing his/her DISLIKE due to the situation described by ϕ .

Abstracting over the different examples in the scope of the present study, we argue that Greek utterances containing plural mass nouns trigger the performance of two conjoined speech acts. The first one is dependent on the utterance type. To avoid complications, here we have limited ourselves to assertions, via which the speaker publicly commits to the truth of a

¹⁰ Following Krifka (2020) the turnstile \vdash is used to signal a public commitment and the symbol $J-$ is used to signal a private judgment regarding the truth of a proposition.

proposition φ , which corresponds to the descriptive, primary *at-issue* content. The second one is an expressive speech act through which the speaker expresses her/his dislike ψ , which corresponds to the expressive, secondary *at-issue* content. It is this latter act that fleshes out the interpretational import of plural morphology on Greek mass nouns. It is also this act that captures the pretheoretical statement we made earlier according to which mass plurals are expressive variants of their singular counterparts. The interpretation of utterances containing plural mass nouns in Greek can be represented with the abstract schema in (30).

- (30) [ActP [Act ASSERT] [Comp [Com \vdash] [JP [J J-] [TP φ]]]] &
 [ActP [Act EXPRESS] [Comp [Com \vdash] [JP [J J:DISLIKE] [TP φ]]]]

By contrast, the representation of utterances containing singular mass nouns in Greek would lack the EXPRESS speech act. Notice that our proposal fares well not only with respect to the production of Greek mass plurals but also their perception, as its picture emerged through the results of our Experiments 1 and 2.

Before closing this section, a comment is in order. We showed that a commitment-based speech act framework can capture the expressivity of Greek plural mass nouns and, specifically, the fact that they convey the dislike of the speaker towards the situation described. This expression of dislike was the object of our main hypothesis, which was confirmed by the experimental study presented in this paper. The remaining question is whether this system can also host scatteredness and/or abundance, which have been associated with plural mass nouns in the previous literature. Regarding scatteredness, as hinted at earlier, we are willing to side with Erbach (2019) in assuming that it is grammatically encoded in the plurals under study. The claim is corroborated by the fact that the scatteredness reading of mass plurals was the most preferred by our participants. With respect to abundance, we speculate that, when it appears, it is an inference triggered by the presence of speaker dislike (i.e., contextual information) and plural morphology. We do not commit to the abundance inference being a conversational implicature (in the spirit of Renans et al., 2018) because we did not test its cancellability.¹¹

4. Conclusions

The main motivation for the present study was to address the interpretation of Greek mass nouns with plural morphology, which have been analyzed as instantiating expletive number.

We have provided linguistic evidence for an analysis of Greek plural mass nouns as expressive variants of their singular counterparts, expressing that the speaker feels dislike towards some accessible information context.

We have argued that what looks like a redundant plural number is the trigger of an expressive speech act through which the speaker publicly commits to holding a negative emotive stance that can be abstractly described as DISLIKE towards the situation communicated by the utterance that contains the plural mass noun. The discourse effect of such an expressive act is the direct transfer of the speaker's emotional state from the conversation into the speaker and addressee's *common ground*.

Our experimental investigation reveals that, if *expletiveness* is strictly defined as the absolute absence of any kind of interpretational import, it must be concluded that plural morphology on Greek mass nouns is not expletive. It may contribute nothing to the meaning of the sentence, but it has an effect at the level of utterance interpretation. The presence of plural morphology on a Greek mass denoting nominal triggers the performance of an expressive speech act through which the DISLIKE of the speaker, caused by the situation described by the whole utterance, is conveyed.

We acknowledge that the present study is limited to one language only and, in particular, one grammatical phenomenon. However, we take its conclusions as preliminary evidence that what is usually regarded as expletiveness in the nominal domain may have an effect on interpretation at the level of utterance, in this way abiding by the Full Interpretation principle.

Declaration of competing interest

The authors declare that there is no conflict of interest.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.pragma.2021.05.017>.

¹¹ We thank an anonymous reviewer for raising this issue to us.

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