Alone

LING/42100 "Collaborative Semantics"

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1 Preview

The word(s) *alone* and its/their counterparts in other languages are seriously underdescribed. Yet, in particular in its role as a predicative adjective, *alone*, along with near-equivalents like Spanish *solo*, Russian *odin* or Chinese *yi-ge-ren*, presents interesting challenges to semantic methodology and theory.

For one thing, across the Indo-European of the languages cited above, there is an ambivalence that shows up in a contrast like the following:

(1) Greece is not alone. Concerns have risen at growing debt levels in a number of other countries. (OECD Factblog)

(2) Greece is not alone. It benefits fully from European solidarity. (Michel Barnier, member of the European Commission)

(1) could be prefixed with *Unfortunately*, (2) could be prefixed with *Fortunately*, by the same speaker. Several properties serve to differentiate the two variants:

1. The variant in (1) has a syntactic argument in the form of a *to* infinitive phrase or a PP with *in* and a gerund phrase, similarly in other languages.
2. The variant in (1) does not carry an **animacy constraint**, but the one in (2) does.
3. The variant in (1) is not **gradable**, but the one in (2) is.

To anticipate, we will call the variant in (1) **Q(uantificational)** *alone* and the one in (2) **S(ocio-)S(patial)** *alone*.

SS *alone* presents interesting challenges of its own:

(3) She was alone in the room.

(4) And she was alone in the city.

The truth conditions that first come to mind for (3) seem far too strict for (4).

Besides, there are clear indications that Socio-Spatial *alone* is **gradable**:

(5) The extent that your partner is alone in the marriage, is the extent that your marriage is failing.

Both (4) and (5) point towards a **social dimension** which may seem intangible and intractable.

1.1 The view from other languages: Russian and Chinese

As we discuss the English facts, we will often refer to two not closely related languages, as a comparison and test of the robustness of our generalizations.

1.1.1 Russian

Russian has several ways to convey the meaning 'alone'. Most common are:

- *odin/odna* meaning 'one',
- *odinokij/odinokaja/odinoko* 'alone, lonely' (attributive, predicative and adverb modifications).

We will discuss *odinokij* in Section 5, under **Socio-Spatial *alone***, and *odin* in Section 4, under **Quantificational *alone***, as well as in Sections 3 and 5.

1.1.2 Chinese

Mandarin Chinese has various lexical items to express *alone* in different contexts, for example, *gudu* 'lonely', *teshu* 'unique' and *yi-ge-ren*, literally 'one person'. This last term may qualify as the most direct counterpart of *alone*.

The variant *yi-ge*, without *ren*, is also used as an exclusive particle.

Yi-ge-(ren) has a clear animacy constraint and is more restricted than *alone* in other respects as well, as we shall see in the respective sections below.

1.2 Plan of Presentation

What literature exists is limited to

1. *alone* as a **particle** and
2. *alone* as an **adverb**,

so we start by briefly surveying these two variants (Section **2**), going on to treat the latter separately, also in brief (Section **3**).

We focus on the **Q(uantificational) adjective** in Section **4**, identifying two arguments and providing a definition.

In Section **5** we investigate the gradable, but absolute, adjective and its social dimension, **S(ocio-)S(patial)** *alone*, proposing an analysis of it in terms of

- a **search space**,
- a **social relevance relation** and
- a **social closeness meaure function**.

Section **6** brings conclusions, and an appendix contains two sample derivations.

Table 1 gives an overview over the four types of *alone* along with their values for two attributes, an animacy restriction and gradability.

	animacy restr.	gradability
a particle	0	0
an adverb	1	0
Q adjective	0	0
SS adjective	1	1

Table 1: Four types of *alone* and two attributes

2 State of the art

Little has been written on *alone*, and what has is limited to *alone* as a particle, an alternative to *only*, and *alone* as an adverb modifying agentive VPs.

2.1 The view from *only*: exclusive particle *alone*

Coppock and Beaver (2013): adnominal *alone* fits into an analysis of *exclusives*.

(6) This is **only** for fun.

(7) This is for fun **alone**.

(8) This is **exclusively** for fun.

Coppock and Beaver analyze these items as contributing two types of meaning: they invoke an 'at least' presupposition and contribute to the at-issue content an 'at most' proposition.

(9) It is man alone who is moral $\overrightarrow{presupposed}$ At least [man_F] is moral
It is man alone who is moral $\overrightarrow{at-issue}$ At most [man_F] is moral

The 'at least' contribution is cashed out by a MIN operator and the 'at most' contribution is cashed out by a MAX operator.

(10) $\text{MIN}(p) = \lambda w.\exists p' \in \text{QUD}\,[\,p'(w) \wedge p' \geq p\,]$
'A proposition at least as strong as p is true in w.'

(11) $\text{MAX}(p) = \lambda w.\forall p' \in \text{QUD}\,[\,p'(w) \rightarrow p \geq p'\,]$
'There are no propositions stronger than p true in w.'

(12) $[\![\, only \,]\!] = \lambda p.\lambda w : \text{MIN}(p)(w).\text{MAX}(p)(w)$

According to Coppock & Beaver, adnominal *alone* is equivalent to NP-modfiying *only*.

(13) $[\![\,\text{John alone smokes}\,]\!] = [\![\,\text{Only John smokes}\,]\!]$

(14) $[\![\, alone \,]\!] = \lambda Q_{\langle\langle e,p\rangle p\rangle}.\,\lambda P_{\langle e,p\rangle}.\,[\underbrace{[\lambda p.\lambda w : \text{MIN}(p)(w).\text{MAX}(p)(w)]}_{[\![\, only \,]\!]}(Q(P))]$

(15) $[\![\textit{John alone smokes}]\!] = \textit{alone}((\textsc{lift}(j))(\textsc{smokes}))$[1]
$= \textsc{min}(\textit{John smokes})(w).\, \textsc{max}(\textit{John smokes})(w)$

However, Coppock & Beaver (2013: 32) recognize that this *only*-type approach to *alone* does not explain its other uses.

(16) a. John smokes alone ≠ ?John only smokes
b. John is alone in the big city ◊ ≠ Only John is in the big city
c. John is more alone than Mary → not paraphrasable in this theory

2.2 A Note on Russian and Chinese

In Russian, *odin* alone is used as a counterpart to *alone* in its particle function, its scope being determined by its position:

(17) a. Odin Tom krasil zabor
Alone-M Tom painted-IMP fence
'Tom was the only person to paint a fence'
b. Tom odin krasil zabor
Tom alone-M painted-IMP fence
'Tom was the only person to paint the fence'
c. Tom krasil odin zabor
Tom painted-IMP one fence
'Tom painted one / a fence (he did not paint two fences)'

In Mandarin, both *yi-ge-ren* and *yi-ge* are used as counterparts to particle *alone*. The particle is immediately to the right of the focused noun phrase.

(18) Wo xihuan ni yi-ge-(ren).
I like you alone
'I like you alone.'

(19) Wo yi-ge-(ren) lai-le.
I alone come-PERF
'I alone came.'

2.3 Moltmann (2004) and Measurement *alone*

Moltmann (2004) focuses on *together* but offers a definition of *alone* beside it, intended to cover both "event-related readings", "space-time related readings" and "measurement readings", but the emphasis is on the last kind, in our view a special case of the exclusive particle:

(20) Alberta alone exported over 2 Tcf of shale gas to the US in 2012.

In a nutshell, this sentence would be analyzed as

(21) $\text{ALONE}(a, \lambda x[\textit{exported} \ldots (x)], \text{2Tcf} \ldots)$

where the second member of the argument is a measure function.
The truth condition would be that there is no entity b such that $a \sqsubset b$ and $\lambda x[\textit{exported} \ldots (x)](b) =$ 2Tcf.

[1] *John* must be type-shifted by the LIFT operation into the type of a generalized quantifier.

"Event-related readings" will be derived by adjusting the measure function to be a function f_e mapping an entity c to the subevent of e of which c is an agent.

2.4 The collective/distributive angle: adverbial *alone*

Vaillette (1998: 260) provides a definition of *alone* as part of an argument that predicates which allow distributive **or** collective readings of plural subjects are **non-exhaustive**.
Supporting a pragmatic approach to exhaustiveness proposed by Harnish (1976), he uses (22) to argue that if predicates like *lift the piano* **entail** exhaustiveness, then the adverb *alone* becomes **redundant**, – which is not the case.

(22) Mary lifted the piano alone (while her friends cheered her on).

Vaillette's denotation for adverbial *alone* directly encodes the exhaustiveness:

(23) $[\![\, alone \,]\!] = \lambda P \lambda x \, \neg \exists y \, [\, y \neq x \wedge P(x \oplus y)]$

However, this is both too weak – it does not entail that Mary lifted the piano – and too strong – it entails that John did not lift the piano after or before, and in the next section we propose to improve on it with an event-oriented analysis.

3 *alone*(*ly*) as an Agent′ modifier

This is the word used in famous sentences like (24) and (25).

(24) Tom Sawyer whitewashed his fence alone.

(25) Oswald actuó sólo.

It carries an animacy constraint, probably because it carries the constraint that what it modifies is an agentive VP. Apparent counterexamples to that, like (26),

(26) On Oct 8, 1869, the former President died alone in his home in Concord.

we regard as **depictive** uses of the **spatio-social** adjective (Section 5). On the compositional semantics of depictive constructions, see Pylkkänen (2008: 23).

3.1 A glance at Russian and Mandarin

Although the adverb *alone* and its counterparts in other languages are not our main focus, it may be illuminative to draw a few cross-linguistic parallels.

3.1.1 Russian

The two sentences in (27a-b) may serve to illustrate the adverbial use of *odin*. With plural subjects, we find both collective and distributive readings, in fact, to a considerable degree depending on the **aspect**:

(27) a. Vanya i Sasha podnyali pianino odni
Vanya and Sasha lifted-PERF piano alone-PL
'Vanya and Sasha lifted the piano alone' (collective reading only)

b. Vanya i Sasha podnimali pianino odni
Vanya and Sasha lifted-IMPERF piano alone-PL
'Vanya and Sasha lifted a piano alone' (distributive or collective)

3.1.2 Mandarin

The following sentences illustrate the adverbial use of *yi-ge-ren/liang-ge-ren*. As *yi-ge-ren* literally means 'one person', collective readings are missing.

(28) Xiaoming bu-shi yi-ge-ren ca heiban.
Xiaoming not-is one-CL-person wipe blackboard.
'Xiaoming didn't wipe the blackboard alone.'

(29) Women liang-ge-ren tai-qi gangqing.
We two-CL-person lift-up piano
'The two of us lifted the piano alone.'

3.2 Our analysis

Our analysis assumes that the node Agent′ (or Voice′ or v') has type $e(\varepsilon t)$, i.e., denotes a relation $\lambda x \lambda e \ldots$, and that no other node syntactically accessible to the adverb has that type – transitive verbs being inaccessible:

(30) *Tom Sawyer whitewashed alone his fence.

Then the meaning of the adverb (extensional case) could be defined thus:

(D1) $[\![\, alone(ly) \,]\!] = \lambda P_{e(\varepsilon t)} \lambda x \lambda e \; P(x)(e) \wedge \neg \exists y : \neg y \sqsubseteq x \wedge P(y)(e)$

Applied to (21) in Section 2.4, this entails that Mary lifted the piano, and it is compatible with John lifting it after she did. (For the plural's sake we assume a mereological structure of individuals, x and y ranging over atoms or sums.)

4 Quantification and Decomposition

The first sentence in (1) is elliptic in two respects. An explicit version is (31):

(31) Greece is not alone [among EU members] [in facing high debt levels].

A 'first slot' is filled by *among EU members*, a 'second slot' is filled by *in facing high debt levels*. This 'first slot' could be filled by a PP with another preposition, notably *in*, and the 'second slot 'could be filled by an infinitival *to* phrase.

A clear distinction between this variant and what we will call socio-spatial *alone* can be seen with the following near-minimal pair:

(32) a. I was alone among the savages.
b. I was alone among the savages in getting a Ph.D.

Notably, the first PP in the b. case must denote a set that includes the subject, while in the socio-spatial a. case, that is not true.

It is important to predict the inferences to (33a-b):

(33) a. Other EU members than Greece face high debt levels.

b. Other savages did not get a Ph.D.

We first present some more facts about 'this' *alone*, **Q(uantificational)** *alone*, then we propose an analysis.

4.1 Q *alone*: modification and negation

The variant under consideration here does not seem to be a gradable adjective.

(34) #Jane is more alone (in her class) than John (in his) in supporting same-sex marriage.

But it is modifiable with, or can cooccur with, a range of degree adverbs – see Table 2. Some

string	occurrences
`alone in being`	1.750.000
`no/'t alone in being`	1.550.000
`almost alone in being`	60.000
`pretty much alone in being`	56
`completely alone in being`	40
`practically alone in being`	32
`rather alone in being`	20
`fairly alone in being`	18
`absolutely alone in being`	14
`relatively alone in being`	14
`more or less alone in being`	9

Table 2: Cooccurrence of Q *alone* with negation, degree adverbs

of these also cooccur with quantifiers like *everybody* or *noone*: *almost*, *practically*, *absolutely*, *more or less*; even *pretty much* and *relatively*.

The high proportion of **negative contexts** is striking: more than 80%. In fact, as it appears, ellipsis, 'zero slot' cases like (1) require the sentence to be negated. This is familiar – it has been noted that negation can be conducive to ellipsis.

4.2 Q *alone*: further facts

The variant under consideration here has absolutely no **animacy constraint**:

(35) This is not to say that integration is alone in inspiring discussion about basic concerns of the education sector.

And it cannot under any circumstances be used **attributively**:

(36) #Unfortunately, Greece is not an alone country.

This we can in fact explain, or at least subsume under a generalization: **no** 'anaphoric null complement' adjectives, like *ready*, can be used attributively.

(37) a. I wouldn't be adverse. He's not exactly bad-looking.
b. #I wouldn't be an adverse woman. He's not exactly bad-looking.

4.3 Q *alone*: analysis

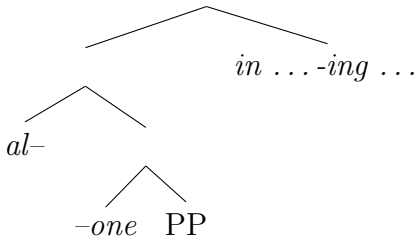
We propose that Q *alone* is not an atom but a molecule consisting of

(i) a functor *al-* and

(ii) a first argument *-one* which can be modified by a type (et) phrase.

More specifically, what is phonologically realized as `/alone/` can project this:

(38)



Motivation for this decomposition comes from quantifiers like *noone*:

(39) a. No- [-one in my class] [likes me]
b. No [classmate of mine] [likes me]

Our definition of the meaning of Q *alone* – actually, *al-* – is (D2) (for simplicity, suppressing the index of evaluation):

(D2) $[\![\, al\text{-} \,]\!] = \lambda P_{(et)} \lambda Q_{(et)} \lambda x : P(x) \wedge Q(x) \,.\, \neg \exists y : \neg [y \sqsubseteq x] \wedge P(y) \wedge Q(y)$

4.4 Q *alone* cross-linguistically

Quantificational *alone* is mirrored in Russian *odin*, but the facts of Chinese are less clear. Some details are given below.

4.4.1 Russian *odin/odna*

Quantificational *alone* is usually translated as *odin/odna* (one) in Russian. One can use the P *sredi* ('in the middle of', 'among') to show the selection set.

(40) Gretsiya ne odna (v Evrope / sredi evropejskix stran) v tom,
Greece not alone-F (in Europe-LOC / amid European countries-GEN) in pro-LOC
chto u nejo vysokie dolgi
that at her-GEN high debts
'Greece is not alone (in Europe/among European countries) in having high debts.'

(41) Vy ne odna v tom, chto pritcha uzh bol'no surovaya
you not alone-F in pro-LOC that fable EMPH painfully harsh
'You are not alone in (thinking) that the fable is too harsh.'

One may also use *edinstvennyj/edinstvennaja* but the syntax is different:

(42) Gretsiya ne edinstvennaja *(strana) v Evrope, u kotoroj vysokie dolgi
Greece not alone-F country in Europe-LOC at which-GEN high debts
'Greece is not the only European country which has high debts.'

4.4.2 Mandarin Chinese *yi-ge-ren*

It seems that *yi-ge-ren* can only mimic Quantificational 'alone' in a q-particle position as shown in (43).

(43) zai xuezhe zhong, ta yi-ge-ren ti-chu le zhe-ge li-lun.
in scholar middle, he one-CL-person propose Perf this-CL theory
'He is alone among the scholars to propose this theory.'

If we try to force a parallel syntactic construction, as in (44), *yi-ge-ren* does not mean 'the only one in the domain', it rather modifies the predicate and means something like 'doing the action alone'.

(44) ta shi xuezhe zhong yi-ge-ren ti-chu zhe-ge li-lun de ren.
he is scholar middle one-CL-person propose this-CL theory Rel person
'He is a person who proposes the theory on his own among the scholars.'

To express the Q *alone* meaning in Chinese in a maximally similar construction, we need to use the word *weiyi* 'unique' in combination with *yige* 'one'.

(45) ta shi xuezhe dangzhong wei-yi yi-ge ti-chu zhe-ge li-lun de ren.
he is scholar middle unique alone propose this-CL theory Rel person
'He is the only person, among the scholars, to propose this theory.'

So the evidence suggests that *yi-ge-ren* on its own cannot be used like Q *alone*.

5 Spatio-social *alone*

seems to convey the content that the subject does not have any fellows within a certain space. Since both the notion of the **fellow** and the notion of the **space** turn out to play critical roles, we call this variant **S(patio-)S(ocial)** *alone*.

We observe an **animacy** or even **humanimacy constraint**, though coercion is possible, as in (46); (47), on the other hand, is a case of personification:

(46) a. Nhi Le eggs should never be alone on a plate.
b. Pitcairn Island is alone in the desert of waters.
c. Each one of these paintings were not meant to be alone on a wall.

(47) This rock was alone for a long, long time; then one day she looked up and saw that there was a sky. The rock was so moved by the beauty...

5.1 A location argument

Naïvely, *alone* as occurring in (48) adds the truth condition that no other being than the subject is in the location:

(48) I was sure that I was alone on the whole floor; yet there were ...

Note that the sentence without *alone* is barely felicitous:

(49) #I was on the <u>whole</u> floor

The sentence without *alone* or *whole* is, but the proposition it expresses seems to be reduced to a presupposition in (48):

(50) I was on the floor

(49) shows that *whole*, according to Morzycki (2002) a **maximizing modifier**, is in cases like (48) is in the **scope** of *alone*; indeed, we will take *whole* as a test that a locative PP is an **argument** of *alone*.

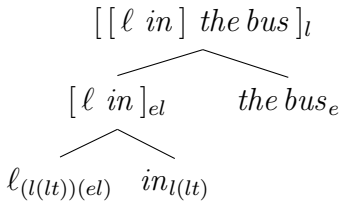
So, we assume that SS *alone* has a location argument, its **search space**, one that can be saturated by an overt **or covert** location phrase.

And we will treat the proposition that the subject is in the location denoted by the location argument as a presupposition.

Following von Stechow (2006), we assume a separate logical type for **locations**, l (using the same symbol for a metalinguistic variable over locations).

Unlike von Stechow (2006), we assume that locations l form a mereology: l can be a **sum** location. Locative PPs are by default type l. (ℓ is a covert functor.)

(51)



A simple first hypothesis:

(H1) $[\![\, alone \,]\!] = \lambda l \lambda x \lambda t : \mathrm{loc}_t(x) \sqsubset l \,.\, \neg\exists y : \neg[y \sqsubseteq x] \wedge \mathrm{loc}_t(y) \sqsubset l$

We assume a mereological structure of individuals where x and y are atomic **or sum** individuals because two or more persons can be alone **together**.

5.2 Some $y \neq x$ must be disregarded; the S relation

The simple hypothesis from the last subsection is too simple:

(52) I was all <u>alone</u> in the room when she died. (www.healthboards.com/ boards/death-dying/940350-mom-passed-away-today.html)

(53) I am sitting <u>alone</u> in the Kilpisjärvi post bus heading towards Tromsø.

(54) My mother is all <u>alone</u> in Chicago, all because I was drafted.

(54), in particular, does not mean that my mother is the only person in Chicago. It means that she does not have friends or relatives there, people who count.

To accommodate this, we assume a special domain restriction encoded in *alone*, a **social relevance relation** S that filters out socially irrelevant entities:

(H2) $[\![\, alone \,]\!] = \lambda l \lambda x \lambda t : \mathrm{loc}_t(x) \sqsubset l \,.\, \neg\exists y : \neg[y \sqsubseteq x] \wedge \mathrm{S}_t(x)(y) \wedge \mathrm{loc}_t(y) \sqsubset l$

But this definition is still too simple.

5.3 SS *alone*: gradable but absolute; the d measure

SS *alone* seems to be gradable, occurring with degree adverbs like *completely* or *pretty* and in comparatives.

(55) If I want to be alone but not completely alone, I just go to a park.

(56) You don't get much more alone than sitting in the dark in your empty house. (Carson McCullers: *The Heart is a Lonely Hunter*)

But it does not seem to be a relative adjective. It seems to us that to the extent that a sentence like (57) makes sense, we coerce *alone* into meaning 'feel alone'.

(57) I lived with my older aunt, but I was very alone.

(58) I felt so bad for KT when he was so alone and sad in LA, I just . . .

Note that a thus modified *alone* cannot be predicated of an inanimate subject:

(59) The tree was {#very, so} alone on the hill.

This restriction follows if *alone* is taken to lexicalize a 'social-relation' meaning **and** an upper-closed scale, allowing coercion of one, but not both, at a time; to

- a 'spatial-relation' meaning consistent with inanimacy **or**
- an open scale implying an experiencer interpretation.

Indeed, *alone* seems to have much in common with upper-closed scale adjectives like *empty*, with a maximum at 0.[2] The positive formative relevant here is thus

(60) $[\![\,\text{pos}\,]\!] = \lambda m_{e(id)} \lambda x \lambda t : m(x)(t) \in D_d \,.\, m(x)(t) \doteq 0$

where the definedness condition is to project any such condition coming from m (D_d is the domain of degrees), and $\doteq$ is to tolerate some deviation from $=$).

- What is the source of degrees of being alone?

We will motivate the introduction of a **social closeness measure function** d yielding values between –1 and 0.

5.3.1 The positive and *completely*

What could constitute the difference between (pos) *alone* and *completely alone*?

(61) (Just then they heard a bang behind them, making Dean whirl around. Then the temperature dropped, something was coming. "Feel that?" he asked, gripping his gun.) "I'd say we're not quite alone anymore," (she said with a nod, her eyes darting around to see where **the spirit** might be should it appear.)

We are still alone but not quite, as there is another salient being in the location; but since this is a ghost, it has only a minute 'belonging factor' relative to us.

(62) Wenn euer Lied das Schweigen bricht, bin ich nicht ganz allein.
when your song the silence breaks am I not quite alone
(Karl Gottlieb Lappe: *Der Einsame* 'the solitary one')

[2] See Kennedy and McNally (2005) on "relative-like, imprecise interpretations".

In this Schubert Lied, the addresses are **hearth crickets**, barely fellow beings, or fellow beings only to a low degree.

(63) Yesterday we were out sailing. We were completely alone on the lake. True, there were some water cribs and a ferry and a tourist ship – they didn't count. However, when we were almost back in the harbor again, we spotted another sailboat – far offshore. So we were not *completely* alone on the lake anymore, though arguably still *alone*: that other boat was so far away we didn't need to consider our course in relation to it, we were far from within waving distance, etc.

The water cribs etc. didn't count because they didn't pass the social filter $\mathrm{S}(x)$, and the other boat made out the difference between alone and completely alone, since it had a very low closeness or involvement factor to us.

This motivates us to introduce a measure function d measuring social closeness between two beings. $\mathrm{d}(x)(y)$ may be close to but not equal to 0.

If *alone* is coerced to apply to inanimates and the measure function d is active, as in (64), social closeness can become spatial closeness:

(64) This island is more alone than that one.

Our notions of d, and S, should be wide enough to accommodate such cases.

5.3.2 Proportionality

A comparative can be verified in two different ways.

(65) Ann is more alone in her dorm than Sally is.

Suppose first that Ann and Sally are in the same dorm. All else being equal, it seems that the sentence is true iff Ann has less social interaction than Sally.

But if the dorms are of different sizes, proportionality seems to come into play: knowing 3 out of 80 people seems more 'alone' than knowing 3 out of 20.

This motivates us to encode a form of proportionality in the semantics of *alone*, as in (D4) in 5.5.

5.4 SS *alone* cross-linguistically

Both Russian and Chinese deviate from English regarding spatio-social *alone*: the word commonly used to express that the subject has no socially relevant others in a certain location is **not gradable**.

5.4.1 Russian

Russian may use *odin/odna* for spatio-social *alone*:

(66) Odin doma
alone-M home-LOC
'Home alone' [the Russian title of the "Home Alone" movie franchise]

However, one would also use the word *odinokij/odinoka*, introduced in 1.1.1, to convey some of the meaning of spatio-social *alone*. This word can also mean 'single (unmarried/unpartnered)' or 'lonely', especially in adverb form. It can be graded and intensified, unlike *odin*:

(67) a. Mne tak odinoko!
me-DAT so alone-ADV
'I feel so alone!'
b. Na severe dikom stoit odinoko . . . sosna
on north-LOC wild-LOC stands alone-ADV pine
'In the wild north a pine tree stands alone' [from Lermontov's translation of Heine's poem "Der Fichtenbaum und die Palme"]
c. Odinokij putnik idet po doroge
alone-M traveller walk-IMP on road-DAT
'A traveller walks alone / A lone traveller walks on the road.'

5.4.2 Mandarin

Yi-ge-ren in the spatio-social sense is not gradable. It is objective and does not mean 'feel lonely'.

(68) Xiaoliu shi yi-ge-ren.
Xiaoliu be one-CL-person
'Xiaoliu is alone.'

(69) Xiaoliu zai dachengshi li yizhi shi yi-ge-ren.
Xiaoliu at metropolis middle always be one-CL-person
'Xiaoliu is always alone in a metropolitan city.'

(69) actually shows that the S filter is relevant in Mandarin as well, as it is not very likely that Xiaoliu is the only person in a metropolitan city. The sentence actually means that Xiaoliu does not have any relatives with him in the city.

Yi-ge-ren is incompatible with degree morphemes like *wanquan* 'completely' or *shifen* 'very' and cannot be used in a comparative construction.

(70) #Ta shi wanquan yi-ge-ren.
He is completely one-CL-person
'He is completely alone.'

(71) #Ta shifen yi-ge-ren.
He very one-CL-person
'He is very alone.'

(72) #Xiaoming bi Xiaohong geng yi-ge-ren
Xiaoming than Xiaohong more one-CL-person
'Xiaoming is more alone than Xiaohong.'

This piece of evidence may lend support to our coercion analysis of some of the cases mentioned above for English.

5.5 Final analysis

We take the adjective stem *alone* to denote: · a partial function from a location l to a measure function, more precisely, to · a function from x, the subject, and a time t (could also be a state) to a measure. The measure is:

- undefined if x is not in l at t
- 0 if there are no other socially relevant beings in l at t

- some degree of social closeness ranging from -1 to 0 if there are other socially relevant beings in l at t – the degree of social closeness between x and the maximum member of the set of such beings at t

Again, we disregard the index of evaluation:

(D3) $$[\![\, \textit{alone} \,]\!] = \lambda l \lambda x \lambda t : \mathrm{loc}_t(x) \sqsubset l \,.\, \begin{cases} 0 & \text{if } Y = \emptyset, \\ -\mathrm{d}_t(x)(\oplus Y) & \text{otherwise} \end{cases}$$
$$\text{for } Y = \{\, y \mid y \text{ is atomic} \wedge \neg y \sqsubseteq x \wedge \mathrm{S}_t(x)(y) \wedge \mathrm{loc}_t(y) \sqsubset l \,\}$$

Both S and d are non-logical constants and, as such, vague; in particular, the d measure of closeness between x and a non-atomic $\oplus Y$ will be very imprecise – and sensitive to subtle contextual influences.

In particular, proportionality **can**, but may not, be taken into account. If (D3) is felt to be too vague, we can revert to (D4).

(D4)
$$[\![\, \textit{alone} \,]\!] = \lambda l \lambda x \lambda t : \mathrm{loc}_t(x) \sqsubset l \,.\, \left(-\frac{\sum_{y \in Y} \mathrm{d}_t(x)(y)}{f(|Y|)} \right)$$

$$\text{for } Y = \{\, y \mid y \text{ is atomic} \wedge \neg y \sqsubseteq x \wedge \mathrm{S}_t(x)(y) \wedge \mathrm{loc}_t(y) \sqsubset l \,\}$$

$$\text{and } f(x) = \begin{cases} 1 & \text{if } x = 0 \\ x & \text{otherwise} \end{cases}$$

Any way, the **animacy constraint** can be traced to the fact that S and d are only defined for animates.

5.6 When the location is implicit

Often enough, the l argument is not overtly saturated. Maybe there is a locative phrase higher, maybe there is none at all in the sentence. What happens then?

5.6.1 Contextual determination

The argument may become a deictic or anaphoric proform, ('(in/up/down/...) (t)here'). A deictic case:

(73) 00:06:34 "Leave us."
00:06:37 "Yes, my lord."
00:06:50 "We are alone."

An anaphoric case:

(74) 00:48:15 "Was anyone else on board with you?"
00:48:18 "David, we really must put the poor man to bed."
00:48:21 "No, I was alone."

This would follow a familiar pattern – it's what usually happens with missing internal arguments of relational nouns.

5.6.2 Indefinite interpretation

The location argument can also get an indefinite interpretation, as a (suitably restricted) **existential location quantifier**. This is nothing unusual either; think again of relational nouns, or pseudo-transitive verbs.

(75) She sat alone on the bus, as she usually did.

(76) Are you alone this Thanksgiving?

We need the restriction that x is in l – however, the independently motivated presupposition as definedness condition $\mathrm{loc}_t(x) \sqsubset l$ can supply this.[3]

In addition, one needs some contextual or pragmatic mechanism of constraining the relevant '**radius**' around $\mathrm{loc}_t(x)$. This is nothing very special for *alone*:

(77) Sometimes when there's noone else around I google myself.

[3] See Appendix: Sample Derivations, (C2).

6 Summary and Conclusions

All variants of English *alone* and its Russian and Mandarin counterparts have a common core, something like $\boxed{\neg\exists y \neq x}$.

On syntactic grounds, there are reasons to distinguish four variants of *alone*: the **particle**, the **adverb**, the **adjective** with a **property argument**, the **adjective** with a **location argument**.

In addition, semantic facts strengthen the case for distinguishing the latter two: $\pm$**animacy restriction**, $\pm$**gradability**.

The analysis of SS *alone* opens a window on a **social dimension** of semantics, manifesting itself in two notions:

- a **social relevance relation** S, filtering out socially irrelevant others
- a **social closeness measure** d, mapping a y to how close (s)he is to x, thus allowing gradability

The comparison with Russian and Mandarin strengthens the case for the former, S, but weakens the case for the latter, d, because the word normally used for the adjective 'alone', *odin*/*odna* and *yi-ge-ren* (*liang-ge-ren*, ...), is **not gradable**.

The closest gradable counterparts, *odinokij*/*-a* and *gudu*, are similar in meaning to English *lonely*, where the subject is an **experiencer**.

Otherwise, the versatility of what may seem to be one root, $\sqrt{}$*alone*, is mirrored in other languages, in particular Russian, where *odin* shares all four variants.

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Appendix: Sample Derivations

We present the semantic composition of (78) based on two different structures:

(78) Mary sit alone on the bus.

a. $\mathrm{t}\,[\,\mathit{mary}\,[\,\mathit{sit}\,[\,\mathrm{pos}\,[\,\mathit{alone}\,[[\,l^0\ \mathit{on}\,]\,\mathit{the\ bus}\,]]]]]$

b. $\mathit{some}(R)\,[\,\mu_1\,[\,\mathrm{t}\,[\,\mathit{mary}\,[[\,\mathit{sit}\,[\,\mathrm{pos}\,[\,\mathit{alone}\ l_1\,]]]\,[\,l^1\,[[\,l^0\ \mathit{on}\,]\,\mathit{the\ bus}\,]]]]]]$

In (78a), *on the bus* fills the location argument of *alone*, in (78b) this argument is a covert $\mathit{some}(R)$ undergoing QR.

In the former case, there is noone else relevant on the whole bus; in the latter, Mary has, say, a row to herself.

(C1) $[\![\,\mathit{alone}\,]\!] = \lambda l \lambda x \lambda t :\, \mathrm{loc}_t(x) \sqsubset l\,.\, \begin{cases} 0 & \text{if } Y = \emptyset, \\ -\mathrm{d}_t(x)(\oplus Y) & \text{otherwise} \end{cases}$

for $Y = \{\, y \mid y \text{ is atomic} \wedge \neg y \sqsubseteq x \wedge \mathrm{S}_t(x)(y) \wedge \mathrm{loc}_t(y) \sqsubset l \,\}$

$[\![\,\mathit{alone}\,[[\,l^0\ \mathit{on}\,]\,\mathit{the\ bus}\,]\,]\!] = \lambda x \lambda t :\, \mathrm{loc}_t(x) \sqsubset \mathbf{l}\,.\, \begin{cases} 0 & \text{if } Y = \emptyset, \\ -\mathrm{d}_t(x)(\oplus Y) & \text{otherwise} \end{cases}$

for $\mathbf{l} = [\![\,[\,l^0\ \mathit{on}\,]\,\mathit{the\ bus}\,]\!]$ (cf. 5.1)

$[\![\,\mathrm{pos}\,[\,\mathit{alone}\,[[\,l^0\ \mathit{on}\,]\,\mathit{the\ bus}\,]]\,]\!] = \lambda x \lambda t :\, \mathrm{loc}_t(x) \sqsubset \mathbf{l}\,.\, -\mathbf{d}_t(x)(\oplus Y) \doteq 0$

for $\mathbf{d}_t(x)(\oplus Y) = 0$ if $Y = \emptyset$, $\mathrm{d}_t(x)(\oplus Y)$ otherwise (cf. 5.3)

$[\![\,\mathit{sit}\,]\!] = \lambda x \lambda t\, \mathrm{sit}(t)(x)$

$[\![\,\mathit{sit}\,[\,\mathrm{pos}\,[\,\mathit{alone}\,[[\,l^0\ \mathit{on}\,]\,\mathit{the\ bus}\,]]]\,]\!] = \lambda x \lambda t :\, \mathrm{loc}_t(x) \sqsubset \mathbf{l}\,.\, -\mathbf{d}_t(x)(\oplus Y) \doteq 0$

and $\mathrm{sit}(t)(x)$, for $\mathbf{d}_t(x)(\oplus Y) = 0$ if $Y = \emptyset$, $\mathrm{d}_t(x)(\oplus Y)$ otherwise

$[\![\,\mathit{mary}\,[\,\mathit{sit}\,[\,\mathrm{pos}\,[\,\mathit{alone}\,[[\,l^0\ \mathit{on}\,]\,\mathit{the\ bus}\,]]]]\,]\!] = \lambda t : \mathrm{loc}_t(m) \sqsubset \mathbf{l}\,.\, -\mathbf{d}_t(m)(\oplus Y) \doteq 0$

and $\mathrm{sit}(t)(m)$, for $\mathbf{d}_t(m)(\oplus Y) = 0$ if $Y = \emptyset$, $\mathrm{d}_t(m)(\oplus Y)$ otherwise

$[\![\,\mathrm{t}\,[\,\mathit{mary}\,[\,\mathit{sit}\,[\,\mathrm{pos}\,[\,\mathit{alone}\,[[\,l^0\ \mathit{on}\,]\,\mathit{the\ bus}\,]]]]]\,]\!]^g =$

$\begin{cases} 0 & \text{iff } \mathrm{loc}_{g(\mathrm{t})}(m) \sqsubset \mathbf{l} \text{ and } \neg[-\mathbf{d}_{g(\mathrm{t})}(m)(\oplus Y) \doteq 0 \text{ and } \mathrm{sit}(g(\mathrm{t}))(m)] \\ 1 & \text{iff } \mathrm{loc}_{g(\mathrm{t})}(m) \sqsubset \mathbf{l} \text{ and } -\mathbf{d}_{g(\mathrm{t})}(m)(\oplus Y) \doteq 0 \text{ and } \mathrm{sit}(g(\mathrm{t}))(m) \end{cases}$

where t is the trace of a QRed Tense Phrase

(C2) $[\![\,\mathit{alone}\ l_1\,]\!]^g = \lambda x \lambda t :\, \mathrm{loc}_t(x) \sqsubset g(l_1)\,.\, \begin{cases} 0 & \text{if } Y = \emptyset, \\ -\mathrm{d}_t(x)(\oplus Y) & \text{otherwise} \end{cases}$

for $Y = \{\, y \mid y \text{ is atomic} \wedge \neg y \sqsubseteq x \wedge \mathrm{S}_t(x)(y) \wedge \mathrm{loc}_t(y) \sqsubset g(l_1) \,\}$

$[\![\,\mathrm{pos}\,[\,\mathit{alone}\ l_1\,]\,]\!]^g = \lambda x \lambda t :\, \mathrm{loc}_t(x) \sqsubset g(l_1)\,.\, -\mathbf{d}_t(x)(\oplus Y) \doteq 0$

for $\mathbf{d}_t(x)(\oplus Y) = 0$ if $Y = \emptyset$, $\mathrm{d}_t(x)(\oplus Y)$ otherwise

$[\![\,\mathit{sit}\,[\,\mathrm{pos}\,[\,\mathit{alone}\ l_1\,]]\,]\!]^g = \lambda x \lambda t :\, \mathrm{loc}_t(x) \sqsubset g(l_1)\,.\, -\mathbf{d}_t(x)(\oplus Y) \doteq 0$

and $\mathrm{sit}(t)(x)$, for $\mathbf{d}_t(x)(\oplus Y) = 0$ if $Y = \emptyset$, $\mathrm{d}_t(x)(\oplus Y)$ otherwise

$[\![\, l^1\,[[\, l^0\ on\,]\ the\ bus\,]\,]\!] \;=\; \lambda x \lambda t\ \ \mathrm{loc}_t(x) \sqsubset [\![\, [\, l^0\ on\,]\ the\ bus\,]\!]$

$[\![\, [\, sit\,[\,\mathrm{pos}\,[\, alone\ l_1\,]]]\,[\, l^1\,[[\, l^0\ on\,]\ the\ bus\,]]\,]\!]^g \;=\; \lambda x \lambda t : \mathrm{loc}_t(x) \sqsubset g(l_1)\,.$
$\quad -\mathbf{d}_t(x)(\oplus Y) \doteq 0$ and $\mathrm{sit}(t)(x)$ and $\mathrm{loc}_t(x) \sqsubset [\![\, [\, l^0\ on\,]\ the\ bus\,]\!]$

$[\![\, mary\,[\, [\, sit\,[\,\mathrm{pos}\,[\, alone\ l_1\,]]]\,[\, l^1\,[[\, l^0\ on\,]\ the\ bus\,]]\,]\!]^g \;=\; \lambda t : \mathrm{loc}_t(m) \sqsubset g(l_1)\,.$
$\quad -\mathbf{d}_t(m)(\oplus Y) \doteq 0$ and $\mathrm{sit}(t)(m)$ and $\mathrm{loc}_t(m) \sqsubset [\![\, [\, l^0\ on\,]\ the\ bus\,]\!]$

$[\![\, \mathrm{t}\,[\, mary\,[\, [\, sit\,[\,\mathrm{pos}\,[\, alone\ l_1\,]]]\,[\, l^1\,[[\, l^0\ on\,]\ the\ bus\,]]]\,]\!]^g \;=$

$$\begin{cases} 1 & \text{iff } \mathrm{loc}_{g(\mathrm{t})}(m) \sqsubset g(l_1) \text{ and } \mathrm{sit}(g(\mathrm{t}))(m) \text{ and} \\ & \mathrm{loc}_{g(\mathrm{t})}(m) \sqsubset [\![\, [\, l^0\ on\,]\ the\ bus\,]\!] \text{ and } -\mathbf{d}_{g(\mathrm{t})}(m)(\oplus Y) \doteq 0 \\ 0 & \text{iff } \mathrm{loc}_{g(\mathrm{t})}(m) \sqsubset g(l_1) \text{ and } \neg[\,\mathrm{sit}(g(\mathrm{t}))(m) \text{ and} \\ & \mathrm{loc}_{g(\mathrm{t})}(m) \sqsubset [\![\, [\, l^0\ on\,]\ the\ bus\,]\!] \text{ and } -\mathbf{d}_{g(\mathrm{t})}(m)(\oplus Y) \doteq 0\,] \end{cases}$$

$[\![\, \mu_1\,[\, \mathrm{t}\,[\, mary\,[\, [\, sit\,[\,\mathrm{pos}\,[\, alone\ l_1\,]]]\,[\, l^1\,[[\, l^0\ on\,]\ the\ bus\,]]]\,]\!]^g \;=$

$\quad \lambda l : \mathrm{loc}_{g(\mathrm{t})}(m) \sqsubset l\,.\,\mathrm{sit}(g(\mathrm{t}))(m)$ and
$\quad \mathrm{loc}_{g(\mathrm{t})}(m) \sqsubset [\![\, [\, l^0\ on\,]\ the\ bus\,]\!]$ and $-\mathbf{d}_{g(\mathrm{t})}(m)(\oplus Y) \doteq 0$

$$[\![\, some(R)\,]\!] \;=\; \lambda L_{lt} \begin{cases} \text{defined} & \text{iff } L \text{ is defined for some } l \text{ in } [\![\, R\,]\!] \\ \text{true} & \text{iff } L \text{ is true for some } l \text{ in } [\![\, R\,]\!] \end{cases}$$

(cf. Blamey 1986: 263). The covert existential quantifier over locations $some(R)$ brings along a free variable R for a restriction on the domain of $[\![\, \exists\,]\!]$. R might be 'about 27 cubic yards big, oblong-shaped' or 'in a seat row of a bus'.

If we can be confident that there will be some $l \in R$ such that $\mathrm{loc}_t(m) \sqsubset l$, the definedness condition can be turned into a truth condition:

$[\![\, some(R)\,[\, \mu_1\,[\, \mathrm{t}\,[\, mary\,[\, [\, sit\,[\,\mathrm{pos}\,[\, alone\ l_1\,]]]\,[\, l^1\,[[\, l^0\ on\,]\ the\ bus\,]]]\,]\!]^g = 1$ if

$\quad$ for some l in R, $\mathrm{sit}(g(\mathrm{t}))(m)$ and $\mathrm{loc}_{g(\mathrm{t})}(m) \sqsubset [\![\, [\, l^0\ on\,]\ the\ bus\,]\!]$ and
$\quad \mathrm{loc}_{g(\mathrm{t})}(m) \sqsubset l$ and $-\mathbf{d}_{g(\mathrm{t})}(m)(\oplus Y) \doteq 0$, false otherwise
$\quad$ for $\mathbf{d}_{g(\mathrm{t})}(x)(\oplus Y) = 0$ if $Y = \emptyset$, $\mathrm{d}_{g(\mathrm{t})}(x)(\oplus Y)$ otherwise and
$\quad Y = \{\, y \mid y \text{ is atomic} \wedge \neg y \sqsubseteq x \wedge \mathrm{S}_{g(\mathrm{t})}(x)(y) \wedge \mathrm{loc}_{g(\mathrm{t})}(y) \sqsubset l\,\}$