Instrument subjects are agents or causers
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1. INTRODUCTION

- External arguments of transitive verbs of change of state can be volitional agents (1a), instruments (1b), natural forces/causers (1c), showing the generality and abstractness of the external argument relation.

(1) a. John broke the window  
    b. The hammer broke the window  
    c. The storm broke the window

- In order to capture this generality, Van Valin & Wilkins 1996, Ramchand 2003 among others have proposed that the thematic role of the external argument position is in fact underspecified. The relevant notion is that of an effector (in Van Valin & Wilkins) or of an abstract causer/initiator (in Ramchand).

While we agree that (1b) does not instantiate an instrument in subject position, we will argue that a complete underspecification of the external theta-position is not feasible, but that at least two types of external theta-roles have to be distinguished, Agents and Causers.¹

Our arguments are based on:

i) cases of morpho-syntactic independence of agent and causers and
ii) the behavior of instrument subjects in English, Dutch, German and Greek.

2. TWO ARGUMENTS AGAINST UNDERSPECIFICATION

2.1 THE MORPHO-SYNTACTIC INDEPENDENCE OF AGENTS AND CAUSERS

I. Greek passive: (see Zombolou 2004 and Alexiadou et al. 2006)

The Greek passive licenses agents (a) but not causers (b) and causing events (c).²

(2) a. Ta mallia mu stegnothikan apo ton komotria  (agent)
    the hair my dried-Nact by the hairdresser
    ‘My hair was dried by the hairdresser’

b. ?Ta ruxa stegnothikan apo ton ilio  (causer)
   The clothes dried-Nact by the sun
   ‘The clothes were dried by the sun’

¹ The idea that within the domain of argument structure a distinction has to be made between Agents and Causers goes back to at least Gruber (1965). More recently, this idea has been implement in various ways, see e.g. Jackendoff (1990), Davis & Demirdache (1995), Reinhart (2002), Kallulli (2005), Folli & Harley (2005) among many others. Here we apply this dichotomy to instrument subjects. In our approach the two roles are not in a subset relation, as in e.g. Kallulli and Jackendoff; neither are they introduced by different eventive vs (vDO, vCAUSE) as in e.g. Folli & Harley. Rather the two types of external arguments are introduced by Voice, as in Kratzer (1996), expressing two independent thematic relations between the subject and an event.

² See Doron (2003) who describes a similar situation for the Hebrew passive.
c. *Ta ruxa stegnothikan apo to aploma ston ilio (causing event)  
the clothes dried-Nact by the-hanging-up under the sun  
‘The clothes were dried by hanging them up under the sun’

II. Jacalteca active: (a Mayan VSO language spoken in Guatemala, see Craig 1976)  
Subjects of intransitive verbs may be animate as well as inanimate, but subjects of transitive verbs are restricted to animate agents. Inanimate causers must be introduced via a preposition.

(3)  
a. speba naj te’ pulta (human agent)  
  close cl./he cl. door  
  ‘he closed the door’

b. *speba cake te’ pulta (causer)  
  close wind cl. door  
  ‘the wind closed the door’

c. xpehi te’ pulta yu cake (causer-PP)  
  closed cl. door by wind  
  ‘the wind closed the door’  
  (lit.: the door closed by the wind)

III. Anticausatives across languages:  
Anticausatives do not license Agents but they license Causer-PPs.


(4)  
a. John broke the window
b. The pressure/explosion broke the vase

c. Will’s banging shattered the window

(5)  
*The window broke by John / by the pressure / by Will’s banging

(6)  
a. The window broke from the pressure / from the explosion / from Will’s banging
b. *The window broke from John

German: (see Alexiadou et al. 2006)

(7)  
a. Die Vase zerbrach *von Hans / *vom Erdstoß  
  the vase broke by Peter / by-the earth-tremor

b. Die Vase zerbrach durch den Erdstoß  
  the vase broke through the earth-tremor

c. Die Vase zerbrach *durch Hans  
  the vase broke through Hans

Greek: (see Alexiadou et al. 2006)3

(8)  
a. *Ta mallia mu stegnosan apo tin komotria  
  the hair my dried-Act by the hairdresser

b. Ta ruxa stegnosan apo me ton ilio  
  the clothes dried-Act by / with the sun

3 See also Kallulli (2005) who describes a similar situation for Albanian anticausatives.
2.2 Restrictions on Instrument Subjects

- The underspecification view cannot explain apparent restrictions on the appearance of instrument subjects.

  It is typically claimed that English licenses instruments in subject position:

(9)  
  a. The key opened the door  
  b. The stone broke the window

But it is reported in the literature that not all languages allow for instruments as subjects (van Voorst 1988, Guilfoyle 1995, 2000). So for example the Dutch counterparts of the English examples are judged to be ungrammatical in Guilfoyle (2000) and van Voorst (1988) respectively.

(10)  
  a. *De sleutel opende de deur  
    The key opened the door  
  b. *De steen brak het raam  
    The stone broke the window

- Guilfoyle (2000), following van Voorst, argues that a parameter exists that distinguishes between two types of languages:

  - **Type A** languages in which the external argument position is closely associated with the **initiator of the event** (Dutch)
  - **Type B** languages in which the external argument is associated with a **participant in the event**, and does not necessarily need to be an initiator (English).

- Focussing on the behavior of instrument subjects in English, Dutch, German and Greek, we argue against the existence of such a parameter.

- A closer investigation of their properties reveals that instrument subjects behave alike in all these languages, and are acceptable only under two conditions which, we argue, force a Causer or an Agent interpretation of the instrument respectively.

- We thus provide further arguments in favor of a formal distinction between Agents and Causers. The close look at instrument subjects provides us with hints what the labels ‘agent’ and ‘causer’ mean.
3. **INSTRUMENT SUBJECTS ACROSS LANGUAGES**

- Fillmore (1968): since the key in (12a) is an instrument, and (12a) and (12b) could refer to the same scenario, the key must be an instrument in (12b) too. Therefore English licenses instrument subjects (in the absence of human agents).

(11) a. The janitor opened the door
    b. The door was opened by the janitor

(12) a. The janitor opened the door with a key
    b. The key opened the door

- But it has been observed that the situation in English is not so clear cut; instruments do not always make good subjects.

(13) a. John loaded the truck with a crane/pitchfork
    b. The crane/*pitchfork loaded the truck

  o What are the differences and the similarities between cranes, pitchforks and keys?

- Building on and modifying work of a number of authors, we argue that there are two interpretations under which an “instrument” can function as a subject, see e.g. Cruse (1973), Talmy (1976), DeLancey (1984, 1991), Schlesinger (1989), Rappaport Hovav & Levin (1992), Kamp & Rossdeutscher (1994), Kearns (2000).

  o under interpretation (A) instrument subjects pattern like natural forces (causers) in that they are conceptualized as eventive / involved in an event.

  o under interpretation (B) the coming about of the event is in a non-trivial way dependent on a property of the instruments; we argue that these instrument subjects are like agents.

  o Both types are introduced by Voice. Under this conception, Voice does not introduce an event (DO) but relates the external argument to the event in two different modes.

  o The grammaticality judgements to be discussed are very subtle. In most cases we are not dealing with sharp ungrammaticality, but with gradience in acceptability. The reason for this is that speakers manage to map each subject to one of these abstract and idealised interpretations with variable success.

  o Crosslinguistically, instruments that are compatible with one of the two interpretations make better subjects than those that aren’t.

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4 We would like to thank Tom McFadden and Jonny Butler for their English judgements, Hans Kamp, Marc van Oostendorp and Jan-Wouter Zwart for their Dutch judgements. The Greek and German judgements are the authors' own.
3.1 INTERPRETATION (A): EVENTIVITY

3.1.1 TWO TYPES OF INSTRUMENTS

- In analysing the sentences in (14) and (15) Kamp & Rossdeutscher (1993:143ff.) distinguish between two types of instruments:
  
  - **Pure instruments**: instruments whose action is conceived as strictly auxiliary to that of the agent by whom they are being employed (14a, 15a)
  
  - **Instrument-causers**: instruments which can be conceived as acting on their own, once the agent has applied or introduced them (14b, 15b)

(14) a. Der Arzt heilte den Patienten mit dem Skalpell
    The doctor cured the patient with his scalpel

(15) a. #Das Skalpell heilte den Patienten
    #The scalpel cured the patient

- We follow Kamp & Rossdeutscher in assuming that these instruments, when they are subjects, are *causers*. We will generalise this notion.

- They are *causers* by virtue of their being involved in an event, without being (permanently) controlled by a human agent.

- The fact that this involvement in an event might be the result of a human being introducing these causers is a fact about the real world, not about the linguistic structure (“which encodes construals of events rather than objective facts” DeLancey 1991:351).

3.1.2 MACHINES

- The following sentences show that machines in contrast to pure instruments make good subjects. One could argue that this is because they can act on their own.

(16) a. The crane picks up the crate
    (from Schlesinger 1989)

(17) a. The piper plane sprayed the fields
    b. #The spray gun sprayed the field

(18) a. The dishwasher cleaned the dishes
    b. #The rag cleaned the dishes
3.1.3 Pure Instruments in an Eventive Construal

- DeLancey (1984) observes that (19a) is strange; ‘the axe’ can be the subject just if it is made clear overtly how it could have the effect: in virtue of some (acquired but independent) (kinetic) energy.

(19) a. #The axe broke the window  
b. The axe fell off the shelf and broke the window  
c. As I was swinging the axe over my head it hit the window and broke it

- Talmy (1976) observes that (20a) “does not fare so badly besides” (20b). He goes on to argue that a sentence like the former “always seems to imply a larger form with a causal event specified”, as in (20b, c).

(20) a. A ball broke the window  
b. A ball’s sailing into it broke the window  
c. A ball broke the window in/by sailing into it

- (20a) implies what in (19) has to be expressed overtly

- The difference between (20a) and (19a) relates to our conceptualization of instruments: axes are prototypically under permanent control by a human being, while this is not the case with e.g. balls.

3.1.4 Natural Forces as Prototypical Causers

- The behavior of eventive instruments mimics the nature of natural forces; the latter are (self-)energetic by definition. Talmy (1976) argues that forces can be analyzed as arising by the conflation of a deeper clause that specifies a whole event;

(21) a. The wind/the rain(fall)/a fire cracked the window  
b. The window cracked from the wind/the rain(fall)/a fire

(22) a. … from [air blowing on the FIGURE] = from the wind  
b. … from [the rain(water) falling on the FIGURE] = from the rain  
c. … from [flames acting on the FIGURE] = from a fire

- While this assumption of a syntactic conflation process is probably a bit outdated we nevertheless want to argue that forces are inherently eventive in a linguistically relevant sense.
3.1.5 EVENTIVE INSTRUMENT SUBJECTS IN OTHER LANGUAGES

**German:**

(23)  
- a. Der Kran hob die Kiste hoch  
  The crane picked the crate up  
- b. *Die Gabel hob die Kartoffel hoch  
  The fork picked the potato up

(24)  
- a. Die runterfallende Axt zerbrach die Scheibe  
  The down-falling axe broke the pane  
- b. Der #(durch die Luft fliegende) Stein zerbrach die Scheibe  
  The (through the air flying) stone broke the pane (# \(\rightarrow\) at least contextually)

(25)  
- The storm broke the pane

**Dutch:**

(26)  
- a. De krat tillt de auto op  
  The crane picked the car up  
- b. *De vork pikte de tomaat op  
  The fork picked the tomato up

(27)  
- a. (??)De steen heeft de ruit gebroken  
  The stone has the pane broken  
- b. De vliegende steen heeft de ruit gebroken  
  The flying stone has the pane broken  
- c. Rondvliegend puin heeft het raam gebroken  
  The around-flying trash has the window broken

(28)  
- The storm has the door open-blew

**Greek:**

(29)  
- a. To hamomili giatrepse ti Maria  
  The camomile cured Mary  
- b. *To nisteri giatrepse ti Maria  
  The scalpel cured Mary

(30)  
- a. O geranos sikose to kivotio  
  The crane picked up the box  
- b. *To piruni sikose tin patata  
  The fork picked up the potato  
- c. to tsekuri espase to parathiro #(peftondas)  
  the axe broke the window (by falling)  
- d. I thiela espase ta parathira  
  The storm broke the windows
3.2 **INTERPRETATION (B): GROUNDING PROPERTY**

- Turning to instruments that cannot be ascribed some intermittent/temporary autonomous eventivity, it has been noted that a difference exists between tools and secondary tools (Nilsen 1973). Only the former can be subjects but not the latter:

(31)  
- a. Ashley cut the melon with a knife  
- b. Casey opened the door with the key

(32)  
- a. This knife cuts the melon easily  
- b. This key opened that door

(33)  
- a. Cathryn ate spaghetti with a fork  
- b. Denis is drinking orange juice with a straw

(34)  
- a. *This fork ate spaghetti  
- b. *This straw is drinking orange juiced

- Consider (35).

(35)  
- The key opened the lock

- DeLancey (1991:348): “... Speakers presented with this sentence in isolation generally have a clear intuition that the key is being given some contrastive force – that the sentence evokes a context in which a particular key, rather than any other, or the key rather than some other means, was essential to the successful opening of the door.”

- This focus effect is more general: any contrastive focus will do.

(36)  
- a. ?(?)The key opened the door  
- b. THIS key opened the door  
- c. The KEY opened the door  
- d. The RED key opened the door  
- e. The key OPENED the door  
- f. The key opened THIS door  
- g. The key opened this DOOR  
- h. The key opened the RED door

- Secondary tools do not become good subjects under any focus:

(37)  
- a. *The rag cleaned the table  
- b. *THIS rag cleaned the dishes  
- c. *The RAG cleaned the dishes  
- d. *The rag CLEANED the dishes  
- e. *The rag cleaned THIS table

- What is it that the focus is doing here?

  - The difference between (36) and (37) suggests that it is not focus alone that is responsible for the acceptability of (36b-h), as can already be seen by the contrast between (36a) vs. (37a).
Furthermore, the fact that focus on either the instrument, the verb or the object can have this effect suggests that it is not solely a property of the instrument itself that is responsible for the amelioration, but rather a property that relates the instrument to the VP.

By precluding alternatives focus stresses a non-trivial relation between (a property of) the subject and the event expressed by the whole VP. This makes sense only if the coming about of the event is crucially dependent on some characteristics of the instrument; this derives the difference between tools and secondary tools (see Schlesinger 1989). We argue that tools in subject position are interpreted as agents.

Recall the motivation for severing the external argument from the verb in Marantz (1984) and Kratzer (1996): The specific interpretation of the agent depends on the whole VP complex that is it is a relationship between the VP and an entity in the subject position:

(38) a. kill a cockroach
    b. kill a conversation
    c. kill an evening watching TV
    d. kill a bottle (i.e. empty it)
    e. kill an audience (wow them)

This is parallel to what we find in the case of instrument subjects where the relationship is stressed via focus.

Humans are the typical realisation of the Agent relation and hence do not require special licensing (focus). However, depending on the specific event described by the VP also human Agents vary with respect to the possibility of being good or bad subjects. For example, if the VP implies intentionality, the NP baby does not make a good subject because it does not have this property.

(39) a. The professor solved the mathematical problem
    b. The baby solved the mathematical problem

Contrastive focus is not the only way to stress the relevance of the relation, the use of Verum Focus, focus particles, modals and modification yields grammatical sentences as well.

(40) To our great surprise the key OPENED/DID open the door

(41) Only an electronic key can open this door (König & Mauner 2005)

(42) His key opened the door without delay (Schlesinger 1989)

This is further exemplified with the sentences (43)-(44) from Schlesinger (1989:191) where the b-sentences are more acceptable than the a-sentences, because “the action or process described in the sentences is crucially dependent on some characteristic of the instrument” and the sentences draw out attention to these characteristics; in (43b) for example it is a well-calibrated rifle.
(43) a. #John’s stick hit the stolen horse
    b. John’s rifle hit the target at a distance of 400 yards

(44) a. #The pencil draws lines
    b. This pencil draws very thin lines

(45) a. #The spray kills the cockroaches
    b. This spray kills cockroaches instantly

3.2.1 GROUNDING INSTRUMENTS IN OTHER LANGUAGES

German:

(46) a. (?)Der Schlüssel öffnete die Tür
The key opened the door
b. Dieser Schlüssel öffnete die Tür
This key opened the door
c. Der rote Schlüssel öffnete die Tür
The red key opened the door

(47) a. *Der Lappen wischte den Tisch ab
The rag wiped the Table off
b. *Dieser Lappen wischte den Tisch ab
This rag wiped the table off

(48) a. ??Der Stift macht/schreibt Linien
The pen makes/writes lines
b. Der Stift macht/schreibt ganz dünne Linien
The pen makes/writes very thin lines

Dutch:

(49) a. ?De sleutel opende de deur
The key opened the door
b. Deze sleutel kan de deur openmaken
This key can the door open
c. De sleutel heeft de deur echt opengemaakt
The key has the door realy opened

(50) ?? De afwasborstel heeft de borden schoongemaakt.
The dishwashing-brush has the dishes cleaned

(51) a. ?? Het potlood tekent/geeft lijnen.
The pencil draws/gives lines
b. Het potlood geeft erg dunne lijntjes
The pencil gives very thin lines

Greek:

(52) a. #To klidi anikse tin porta
The key opened the door
b. Afto to klidi anikse tin porta
This the key opened the door
c. To kokino klidi anikse tin porta
The red key opened the door
(53)  a.  *To pani katharise to trapeze  
      The rag cleaned the table  
  b.  *Afto to pani katharise to trapeze  
      This the rag cleaned the table  

(54)  a.  #To molivi kani grames  
      The pencil does lines  
  b.  To molivi kani poli leptes grames  
      The pencil does very thin lines  

- We have argued that machines can be causers in virtue of their inherent eventivity. However machines are designed in order to fulfil a specific job; they have a job-related property by definition. Therefore they could just as well be subsumed under our agent label.  

- The following sentences from Schlesinger (1989) demonstrate that machines are good or bad subjects depending on the specific job the VP describes.  

(55)  a.  Sheila extracted the square root of 1369 with paper and pencil /with the pocket calculator  
  b.  *The pencil extracted the square root of 1369  
  c.  The pocket calculator extracted the square root of 1369  

(56)  a.  Sheldon computed the area of the building with a pocket calculator  
  b.  ??The pocket calculator computed the area of the building  
  c.  The computer computed the area of the building  

4.  TOWARDS AN ANALYSIS  

- Following Marantz (1984), Kratzer (1996): External arguments are not arguments of verbs but of a Voice head.  

- The structure of (anti-)causative verbs: (Alexiadou et. al. 2006)  

(57)  [(Voice) [ CAUS(e) [Root + Theme]]]  

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Note that CAUS could also simply be seen as an eventive v of the type proposed in Marantz (2005). In this case the causative semantics would not be directly encoded on any verbal head but would result from the combination of an activity v and its stative complement (see Ramchand 2003 for related ideas).  

The structure in (57) is assumed for change of state verbs. In the case of activity verbs, we suggest that the event is not CAUS but ACT. This ACT is not compatible with causers but only with agents. This means that in sentences like (i) the NP is an agent:  

(i)  The boat is dancing on the waves  
It seems to us that Causers are only possible when a stative complement is present, yielding telicity, as the following contrast from German in (ii) shows. The English counterparts of the German examples are not that clear cut:  

(ii)  a.  Hans rollte den Ball (über die Torlinie)  
      Hans rolled the ball across the goal line  
  b.  Der Wind rollte den Ball *(über die Torlinie)  
      The wind rolled the ball across the goal line
Agentivity and causation are syntactically represented in terms of distinct functional heads. CAUS is taken to introduce a causal relation between a causing event (the implicit argument of CAUS) and the resultant state denoted by the Root + Theme complex. Voice introduces the external argument.

Causatives and Anticausatives have a CAUS head but differ in that only the former has Voice. The existence of CAUS in Anticausatives can be detected by the licensing of Causer-PPs (from, durch, apo, see section 2).

- The semantics of Voice:

\[ \lambda P. \lambda x. \lambda e. (R(x,e) \& P(e)) \]

- The external argument is not introduced by an eventive predicate (DO) but denotes a relation (R) between an NP and event.

- Two types of R are required: R (Caus) and R (Agent)
  - R (Caus): the NP names the causing event (Pylkkänen 2002)
  - R (Agent): (a property of) the NP grounds the coming about of the event

- Predictions:

1: Instrument analysed as causers (under eventive construal) should be licensed in contexts in which prototypical causers but not human agents are licensed.

- This turns out to be the case with Anticausatives:

**English:**

(59) a. The window broke from the storm *force*  
   b. The window broke from the falling axe *“eventive instrument”*  
   c. The window broke from the thrown stone *“eventive instrument”*  
   d. The air quality improved from the humidifier *machine*

**German:**

(60) a. Das Fenster zerbrach durch den Sturm  
   The window broke through the storm  
   b. Das Fenster zerbrach durch die runterfallende Axt  
   The window broke through the down-falling axe  
   c. Das Fenster zerbrach durch den darauffallenden Stein  
   The window broke through the on-falling stone  
   d. Das Raumklima verbessert sich durch den Luftbefeuchter  
   The room climate got-better REFL through the humidifier

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6 Alternatively it could be that Voice only introduces agents while causers are introduced in the specifier of CAUS. See Travis (2005) for arguments in favour of such a view. This has however far reaching consequences for other properties normally associated with Voice such as case assignment and passive formation which are beyond the scope of this paper.
Greek:

(61) a. To parathiro espase apo tin kategida
    The window broke by the storm
b. To parathiro espase apo tin ptosi tu tsekuriu
    The window broke by the fall of-the axe
c. To parathiro espase apo tin ptosi tis petras
    The window broke by the fall of-the stone
d. i atmosfera sto domatio alakse me to klimatismo
    the atmosphere in the room changed with the air conditioner

2: Instruments analysed as agents by virtue of their internal characteristics or properties (being crucially relevant for the event) should be licensed in contexts where human agents but not prototypical causers are licensed:

o This turns out to be true in the Greek passive:7

(62) a. #I porta anihtike apo to klidi
    the door opened-Pass by the key
b. I porta anihtike apo afto to klidi
    the door opened-Pass by this the key
c. I porta anihtike apo to elektroniko klidi
    the door opened-Pass by the electronic key
d. *To domatio stegnothike apo afto ton klimatismo
    the room dried-Pass by this the air condition

• Importantly, it has to be shown that the two types of interpretations are independent from one another.

First, agent-instruments NPs are not licensed in environments where only causers are possible:

(63) a. *I porta anikse apo afto to klidi
    Anticausatives
b. *Die Tür öffnet sich durch diesen Schlüssel
c. *The door opened from this key

Second, causer-instruments are not licensed in contexts where only Agents are possible:

(64) a. *I porta anihtike apo ti thiela
    Greek passive
    The door opened-Nact by the strom
b. *O asthenis giatreftike apo to hamomili
    the patient cured-Nact by the chamomile
c. *To parathiro anihtike apo tin ptosi tu tsekuriu
    the window opened-Nact by the fall the axe-gen

• Machines seem to split into two groups.

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7 Earlier on we pointed out that modals have the same effect as contrastive focus. One would therefore expect that instruments are licensed in the passive by-phrase in the presence of a modal. However, the relevant examples are out. The reason for this is that the modals in question are root modals and hence subject oriented.
In (55-56) the machines involved have an agent like behavior.

However, (59d, 60d, 61d) show machines being licensed in anticausatives, pointing to their causer status.\(^8\)

In Greek passives, machines are not licensed via the preposition *apo*, which argues against their agent status (62d).

5. **Verb restrictions and VP restrictions**

- Under the conception of agent introduced above, the term does not include notions like *human, animate, intentional* (see also fn. 5).

- However, these notions seem to be relevant. When the action demands too much deliberation, agentivization of the instrument is blocked and only human agents are OK.

(65) a. The baton is jerking nervously above the conductor’s head (Schlesinger 1989)
   b. *The baton is conducting Tchaikovsky’s Fifth Symphony

(66) a. The pen makes lines on the paper
   b. *The pen writes a letter

- The same holds for causativization:

(67) a. The bullet killed the president
   b. *The bullet murdered the president

- This constraint cannot be formalized simply as an instruction in the lexical entry of the verb. Rather it is the event as a whole which determines the admissibility of agentivization.

(68) a. The chisel was cutting a sandalwood (Schlesinger 1989)
   b. *The chisel was cutting a sandalwood into a statuette

(69) a. The pen is scribbling fast
   b. *The pen is scribbling a poem

- We take these restrictions to be the result of encyclopaedic knowledge about the roots or about the VP-denotation, which sometimes demands properties like *intentional, human, …*).

- The phenomenon is comparable to the well known variance with the causative alternation (see Levin & Rappaport Hovav 1995). In Alexiadou et. al. (2006) the data in (74-76) is derived in a similar way via encyclopaedic knowledge (external vs. unspecified vs. internal causation of the root or the VP-denotation).

(70) a. John broke the vase
   b. The vase broke

(71) a. John destroyed the vase
   b. *The vase destroyed

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\(^8\) Note that machines are licensed but only via the preposition *me*, which introduces instrument-causers, as argued for in Alexiadou & al. 2006.
6. CONCLUSION

We have shown that the differences among the languages under discussion in the area of instrument subjects are either non-existing or minimal, as there are two ways to improve the interpretation of such subjects in all languages under discussion. We argued that the relevant interpretations are those of causer and agent, which further suggests the independence of the two notions.

REFERENCES:


