

Voice

Edit Doron

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The term *voice* is a traditional term (akin to the Greek term *diathesis*) which originates in the grammars of the classical Indo-European languages, where it denotes particular alternations in the assignments of grammatical functions to the verb's arguments. Voice alternations are typically marked as part of the verb's morphology, and accordingly, voice is considered a morpho-syntactic category of the verb. In Classical Greek, for example, there was, in some tenses of the verb, a tripartite morphological voice contrast:

(1) Attic Greek

<u>active voice</u>	<u>passive voice</u>	<u>middle voice</u>
lousō	lousomai	louθēsomai
'I will wash [somebody]'	'I will be washed'	'I will wash myself'

Voice alternations traditionally subsume processes where there is reduction of the number of *arguments of the verb*, i.e. participants in the event denoted by the verb. Some theoretical frameworks of contemporary linguistics, such as functionalist and cognitivist frameworks, expand the application of the term *voice* also to processes where there is increase in the number of arguments of the verb, as in causative and applicative constructions. In these theories, the term *voice* is used for any alternation of the the number of arguments of the verb (Croft 1994, Dixon and Aikhenvald 1997, Shibatani 2006). Other theoretical frameworks restrict the term *voice* to the active-passive contrast, where there is no change in the number of arguments but only their grammatical function, and a different term, *valence alternation*, is used to denote alternation, either decrease or increase, in the number of arguments. Such restrictive approaches are found in typological frameworks (e.g. Haspelmath and Müller-Bardey 2005) and in large parts of generative grammar (explicitly expressed, for example, in Levin and Rappaport 1995, Reinhart and Siloni 2005).

The present discussion endorses an intermediate position, perhaps closest in spirit to the traditional concept, which is also found in formal semantics (Kratzer 1996) and in distributed morphology (Embick 1997). Here voice denotes changes in the grammatical function of the so-called *external argument* (typically the subject of the active verb), including the reduction of this argument.

1. Descriptive coverage of voice phenomena

This section lists and illustrates voice phenomena discussed in the linguistic literature. They are classified by whether they change the grammatical function of the external argument without reducing valence, or whether they also reduce valence. In most cases, the enumerated phenomena clearly fall within the boundaries of the notion of

voice adopted here, and its subclasses. But there are cases which are not clear-cut, and these will be discussed as such. In the case of *inversion* (section 1.1.4), it is not clear whether there is change in the grammatical function of the subject or not. In the case of the *dispositional middle* (section 1.2.3) and the *mediopassive* (section 1.2.5), it is not clear whether or not there is valence reduction.

1.1. Voice alternations which do not reduce valence

1.1.1. Passive

Passive voice morphology marks a change in grammatical function of the verb's external argument without reducing it. The external argument is subject of the active verb, and is suppressed in the case of the passive verb; it is either unexpressed or expressed obliquely. But the suppressed external argument is still the (implicit) external argument of the passive verb.

In (2) below, the external argument of the transitive verb *write* is the subject of the active-voice verb in (2a). In (2b), the external argument is suppressed, but is still an implicit argument: (2b) entails that someone wrote the letter just as much as the active (2a) does. The external argument may be expressed obliquely by means of an optional prepositional adjunct, as in (2c). In (2b-c), the verb's *internal argument* assumes the grammatical function of subject.

- (2) a. John wrote the letter
 b. The letter was written
 c. The letter was written by John

In some languages, the obliquely expressed external argument of a passive verb is assigned the same thematic role which it is assigned in the active voice. In other languages, passive voice assigns the oblique argument the fixed default role of Agent, even in cases where the verb in the active voice assigns it a different role, e.g. Cause, Experiencer, Goal etc. A language of the former type is English, where the passive verb can introduce a variety of thematic roles: (Marantz 1984: 129)

- (3) a. The porcupine cage was welded by Elmer (agent)
 b. Elmer was moved by the porcupine's reaction (cause)
 c. The porcupine crate was received by Elmer's firm (goal/recipient)
 d. Elmer was seen by everyone who entered (experiencer)
 e. The intersection was approached by five cars at once (theme)

Languages of the second type are Greek, Hebrew, Icelandic, where a verb marked by passive morphology assigns only the Agent thematic role to its external argument (cf. Doron 2003 for Hebrew, Jónsson 2003 for Icelandic, and Zombolou 2004, Alexiadou et al 2006 for Greek). The following examples are from Hebrew:

- (4) Hebrew
 a. ha-kluv rutax (al-yedey elmer)
 the-cage weld.PASS by Elmer
 'The cage was welded by Elmer.' (agent)

- b. * elmer rugaš (al-yedey tguvat ha-kipod)
Elmer move.PASS by reaction (of) the-porcupine
'Elmer was moved by the porcupine's reaction.' (cause)
- c. * teyvat ha-kipod qubla (al-yedey ha-xevra)
crate (of) the porcupine receive.PASS by the-firm
'The porcupine crate was received by the firm.' (goal/recipient)

Thematic roles other than the Agent role are compatible with the *middle voice* (which will be discussed in section 1.2 below) but not with the passive voice. Grammatical variants can be constructed of (4b) and (4c) with the middle-voice form of the same verbs, as in (5a) and (5b). (5c) is an example with an experiencer argument:

- (5)
- a. elmer hitrageš (mi- tguvat ha-kipod)
Elmer move.MID from reaction (of) the-porcupine
'Elmer was moved by the porcupine's reaction.' (cause)
- b. tevat ha-kipod hitqabla (al-yedey ha-xevra)
crate (of) the porcupine receive.MID by the-firm
'The porcupine crate was received by the firm.' (goal/recipient)
- c. elmer nir'a (al-yedey kol mi še- nixnas)
Elmer see.MID by each who that enter.MID
'Elmer was seen by everyone who entered.' (experiencer)

In many languages, only transitive verbs can passivize, but in other languages, it is possible to passivize intransitive verbs as well, e.g. in English: (Bolinger 1977, Bresnan 1982, Alsina 2009)

- (6) a. The bed was slept in by George Washington
b. The bed has been thoroughly rolled around on

1.1.2 Impersonal Passive

In some languages where intransitive verbs passivize, the passive construction is impersonal, i.e. no argument is assigned the grammatical function of subject. Some languages require a pleonastic element in subject position in such cases, like the French *il* 'it' in (7a). Others, like German, only require an overt pleonastic element in particular positions, such as the preverbal position in (7b), where the sentence would otherwise be verb-initial. Arabic does not have an overt pleonastic element, but marks the verb in (7c) with default 3MS inflection:

- (7) a. French
Il a été parlé de vos frères hier soir
'It was spoken of your brothers last night.'
(Kayne 1975: 245 (n. 51 (iii)))

- b. German
 Es wird hier getanzt / Hier wird (*es) getanzt
 it AUX here danced
 'People are dancing here.' Lit: 'There is dancing here.'
 (Steinbach 2002: 28 (17a))
- c. Arabic
 ?u?ira ?ila l-risālat-i
 point.PASS.3MS to the-letter.F-GEN
 'The letter was pointed to.' Lit: 'It was pointed to the letter.'
 (Peled 1998: 137 (18); Badawi, Carter & Gully 2004:114)

Some languages, like German and Dutch, allow *by*-phrases in impersonal passive constructions:

- (8) a. German
 Es wurde gestern von uns getanzt
 'There was dancing by us yesterday.' (Siewierska 1984: 97 (7c))
- b. Dutch
 Er wordt door de jongens gefloten.
 'There was whistling by the boys.' (Kirsner 1976: 387 (3b))

This is a marked option, not allowed in Icelandic for example (Sigurðsson 1989). Languages which allow *by*-phrases in impersonal passives also allow them in personal passives (Siewierska 1984).

It was suggested by Perlmutter 1978 and Perlmutter and Postal 1984 that an intransitive verb which has an external argument, an *unergative* verb, can undergo impersonal passive, whereas a verb without an external argument, an *unaccusative* verb, cannot. This is illustrated by the passivizability contrast in Dutch between the unergative verb *run* and the unaccusative verb *fall*:

- (9) Dutch
- a. Er werd (door de jongens) gelopen
 'There was running by the boys.'
- b. * Er werd (door de jongens) gevallen
 'There was falling by the boys.' (Zaenen 1988 (1-2))

Counterexamples to this syntactic characterization have been pointed to by Timberlake 1982 (questioned by Blevins 2003), Zaenen 1988, 1993, Farrell 1992, suggesting that semantic conditions are active as well. One such condition is agentivity, parallel to the restriction on personal passive mentioned in the previous section. An additional condition is telicity. Zaenen 1988 shows that telicity and agentivity reverse the judgments in (9). The telic version of (9a) is ungrammatical, and the agentive version of (9b) is grammatical:

- (10) Dutch
- a. * Er werd naar huis gelopen

1988, Deal 2007). An antipassive analysis has also been proposed for one of the values of the Austronesian voice system (Aldridge 2004, Sells 1995, 1999).

1.1.4 Inversion

The term *inversion* originates in Algonquian linguistics and has been extended to other languages as well. In the words of Thompson 1994, "an inverse construction indicates a deviation from the normal degree of relative topicality between agent and non-agent". In functionalist theories (e.g. Klaiman 1991, Givón 1994a, Shibatani 2006) inverse morphology is considered to mark voice alternation. There may be reasons not to accept the characterization of inversion as voice, in Algonquian languages (cf. Dahlstrom 1991, Woolfart 1991), Athabaskan languages and others (cf. many of the articles in Givón 1994b). The major reason is that inverse clauses are transitive, unlike typical clauses with non-active voice. Yet it is not clear whether the external argument is still in subject position, since, as argued by Ritter and Rosen 2005, Algonquian languages lack any A-positions at all.

Inverse morphology expresses markedness in the proximate-obviate dimension, which grammatically encodes topicality, including a person ranking, where first and second person, which are speech-act participants, are viewed as proximate, and third person as relatively obviate. In direct clauses, the external argument is proximate, and the internal argument is obviate. In inverse clauses, this is reversed. In Algonquian and many other inverse systems, this results in **obligatory** inverse marking of clauses where a third person agent acts on a first or second person patient. This is different from non-active voice, which is normally optional.

The following example is from the Algonquian Plains Cree language (Dahlstrom 1991), where both direct and inverse morphology is obligatorily marked. In (12a), the direct marker -DIR- indicates that the external argument is a speech-act participant (first person in this example) whereas the internal argument is third person. In (12b), the inverse marker -INV- indicates deviation from topicality – the external argument is third person whereas the internal argument is a speech-act participant:

- (12) Plains Cree
- a. ni-wāpam-ā-w
1-see-DIR-3
'I see her/him.'

 - b. ni-wāpam-ikw-w
1-see-INV-3
'S/he sees me.'

There actually is some optionality in inversion as well, but it is mostly restricted. For example, inversion is optional in Algonquian when both arguments are third person. The following examples are from the Algonquian East-Cree language (Junker 2004: (3)-(5)). Both options (13a) and (13b) are grammatical. In (13a), the direct marker -DIR- indicates a third person object which is obviate relative to the proximate third person subject. In (13b), the inverse marker -INV- indicates that the third person object is proximate relative to the obviate third person subject:

- (13) East Cree
- a. miyeyim-e-u
like-DIR-3
'S/he_{PROX} likes her/him_{OBV}'
- b. miyeyim-iku-u
like-INV-3
'S/he_{OBV} likes her/him_{PROX}'

Both clauses in each of (12) and (13) are transitive, i.e. encode two arguments, in comparison with the intransitive passive clause in (14), where agreement to a single argument is marked:

- (14) East Cree
miyeyim-aakanu-u
like-PASS-3
'S/he_{PROX} is liked.'

The salience of topicality in the description of inversion does not contradict subsuming inversion under voice, since topicality interacts with voice as well. Usually, it is hard to passivize a clause with a topical agent (Bresnan et al. 2001):

- (15) * Fries are eaten by me (Riddle and Sheintuch 1983: (110))

Nevertheless, it remains an open question whether inversion should be analysed as a value of the voice dimension.

1.2. Voice alternation which reduce valence: the Middle Voice

Languages with the middle voice morphologically mark this voice on the verb in various ways. Some languages use reduced forms of the reflexive clitic (Russian, Timberlake 2004; French, Labelle 2008; Spanish, Mendikoetxea 2012; German, Steinbach 2002). Others have designated middle voice morphology (Icelandic, Sigurðsson 1989; Hebrew and other Semitic languages, Doron 2003; Greek, Alexiadou and Anagnostopoulou 2004; Albanian, Kallulli 2006; Georgian, Holisky 1981, Salish, Beck 1997).

Greek and Albanian middle morphology (which shows syncretism with passive morphology) is referred to as Non Active (NACT). In other languages, the middle-voice form of the verb is different from the passive voice. The following example is from Icelandic (Sigurðsson 1989: 268):

- (16) Icelandic
- a. Lögreglan drap hundinn
the police.NOM killed the dog.ACC

- 'The police killed the dog.' active voice
- b. Hundurinn var drepinn (af lögreglunni)
The dog.NOM was killed by the police
'The dog was killed by the police.' passive voice
- c. Hundurinn drapst (*af lögreglunni)
the dog.NOM killed.MID by the police
'The dog got killed.' middle voice

The middle voice differs in several respects from the passive voice. The external argument of the active verb is not only suppressed in the middle voice, as it is in the passive, but typically altogether absent from the clause, as shown by the contrast between (16b) and (16c) above. Moreover, unlike the passive voice, the middle is independent of the active voice. Middle-voice verbs exist for which there are no corresponding active-voice verbs (Kaufmann 2007):

- (17) Russian
ostat'-sja *ostat' bojat-sja *bojat' nadejat-sja *nadejat'
remain-REFL fear-REFL hope-REFL
- (18) Hebrew
notar *yatar hitxaret *xeret hit'aqeš *iqeš
remain.MID regret.MID insist.MID

1.2.1 Anticausative

The middle voice derives a verb which does not have an external argument. In the simplest case, this has the effect of an anticausative form which alternates with a transitive active verb.

- (19) Russian
a. rebjonok razbil čašk-u
child.NOM broke.MS cup.FS-ACC
'The child broke the cup.' active voice
- b. čašk-a razbila-s'
cup.FS-NOM broke.FS-REFL
'The cup broke.' middle voice
- (20) Hebrew
a. ha-yéled šavar et-ha-kos
the-child break.3MS ACC-the-cup.FS
'The child broke the cup.' active voice
- b. ha-kos nišbera
the-cup.FS break.MID.3FS
'The cup broke.' middle voice

1.2.2 Reflexive / Reciprocal

Some verbs require an agent participant as a lexical property. In the active voice, the agent role is assigned to the external argument. In the middle voice, the agent role is sometimes assigned to the internal argument, **in addition** to the original role of the internal argument. This assignment of two roles to a single argument gives rise to the reflexive and reciprocal (roughly, group reflexive) reading. The examples in (21)-(22) and the examples in (23)-(24) are familiar examples of reflexive and reciprocal verbs:

Reflexives:

(21) Russian

- a. parikmaxer postrig katju
hairdresser sheared.MS Katja.ACC
'The hairdresser gave Katja a hair cut.'
- b. parikmaxer postrig-sja
hairdresser sheared.MS-REFL
'The hairdresser had a hair cut.'

(22) Hebrew

- a. ha-sapar siper et-dina
the-hairdresser shear ACC-Dina
'The hairdresser gave Dina a hair cut.'
- b. ha-sapar histaper
the-hairdresser shear.MID
'The hairdresser had a hair cut.'

Reciprocals:

(23) a. Russian

lena i maša vstretili-s'
Lena and Masha met.PL-REFL
'Lena and Masha met.'

- b. Hebrew
dani ve- dina nifgešu
Dani and Dina meet.MID
'Dani and Dina met.'

(24) a. Russian

dina i kolja perepisyvajut-sja
Dina and Kolja rewrite.3PL-REFL
'Dina and Kolja correspond.'

- b. Hebrew
david ve- ruti hitkatvu
David and Ruti write.MID
'David and Ruti corresponded.'

Sometimes it is not the internal argument which is assigned the role of agent, but rather the argument of an applicative head, an experiencer in the following examples. In these examples, Lena fills both the experiencer and the agent roles in the described event. The prefix *na-* is a perfectivizing affix which has a cumulative interpretation.

- (25) Russian (Kagan and Pereltsvaig 2011)
- a. *lena na-jela-s'*
 Lena *na-ate.FS-REFL*
 'Lena ate her fill.'
- b. *lena na-jela-s' kotlet / kotletami*
 Lena *na-ate.FS-REFL burgers.GEN/ burgers.INSTR*
 'Lena stuffed herself on burgers.'
- c. *lena na-smotrela-s' francuzskix fil'mov*
 Lena *na-watched.FS-REFL French films.GEN*
 'Lena has watched French films to the limit.'

1.2.3 Dispositional Middle

Some verbs in the middle voice denote a dispositional property of the internal argument:

- (26) a. Russian
etot xleb legko rezhet-sja
 this bread easily cut.3S-REFL
 'This bread cuts easily.'
- b. Hebrew
ha-bad ha-ze mitgahec nehedar
 the-cloth the-this iron.MID superbly
 'This cloth irons superbly.'
- c. Dutch
Dit boek leest makkelijk.
 'This book reads easily.'

There is an ongoing controversy in the linguistics literature concerning the question of whether or not the dispositional middle is reduced in valence relative to the active verb. The question is whether the external argument of the active verb should be considered an argument of the dispositional middle verb (Keyser and Roeper 1984, Hale and Keyser 1987, Condoravdi 1989, Stroik 1992, Lekakou 2004, Bhatt and Pancheva 2005, Schäfer 2007, Kallulli 2007). An indication of the implicit presence of the external argument is the possibility of expressing it obliquely, similarly to the passive. Several languages allow a by-phrase with dispositional middles:

- (27) a. Greek (Condoravdi 1989)
afto to vivlio diavazete efxarista akomi ki apo megalus

this the book read.NACT with pleasure even and by grown-ups
'This book reads with pleasure even by grown-ups.'

- b. Canadian French (Lekakou 2005)
Ces étoffes se repassent facilement par tout le monde
these fabrics MID iron easily by everybody
'These fabrics iron easily by everybody.'
- c. Hebrew
ha-bad ha-ze mitgahec nehedar al-yedey kol exad
the-fabric the-this iron.MID superbly by every one
'This fabric irons superbly by anyone.'

Other languages disallow a by-phrase:

- (28) a. English (Ackema and Schoorlemmer 1994)
Walls paint easily (*by anyone)
- b. German (Fagan 1992)
Dieses Buch liest sich (*von den meisten Lesern/ergendwem) leicht
this book reads REFL (*by the most readers/anyone-DAT) easily
'This book reads easily (*by most readers/ anyone).'

Yet even languages which permit a by-phrase only allow a very restricted subset denoting human arguments, which are also typical experiencers, and thus may actually be the arguments of the obligatory adverbs found in this construction. Accordingly, the agent may be present in the construction, but not as argument of the middle verb. Middle morphology assigns the verb's internal argument some kind of agentive role, similarly to the reflexive alternation (cf. Kemmer 1993). Under this view, the middle voice attributes to the internal argument the agent-like characteristic of being responsible, because of its inherent properties, for the dispositional property denoted by the verb. The dispositional middle may thus be viewed as a modalized reflexive middle.

A different type of dispositional middle which can also be analysed as a modalized reflexive is found in the Slavic languages. In (29) and (30) below, the verb has two internal arguments, a theme and a goal. The theme is additionally assigned the agent role in the middle voice, and constitutes the argument which the dispositional property is predicated of. The implicit goal is a human argument:

- (29) Russian (Timberlake 2004)
- a. sobaka kusajet vasju
dog bites.3S Vasja.ACC
'The dog is biting / bites Vasja.'
- b. sobaka kusajet-sja
dog bites.3S-REFL
'The dog bites.'
- (30) a. krapiva žžot nogi
nettle stings.3S legs.ACC

'The nettle is stinging / stings legs.'

- b. krapiva žžot-sja
nettle stings.3S-REFL
'The nettle stings.'

1.2.4 Impersonal Middle

Impersonal middles are dispositional middles constructed from intransitive verbs. Parallel to the impersonal passive, this construction features expletive subjects. But there are curious differences between the subjects of the impersonal middle and the impersonal passive. In German, the expletive subject is obligatory in the impersonal middle, as in (31a), whereas in the impersonal passive it is unacceptable in subject position, other than in the position preceding the verb sentence-initially (cf. (7b) above). In Dutch, e.g. (31b), the expletive *het* used in impersonal middles is different from the expletive *er* used in impersonal passives (cf. (8b) above). These differences correlate with the structural difference between impersonal passives and impersonal middles. In the passive voice, the verb's null external argument occupies an argument position, whereas the external argument is not part of the structure in the middle construction, which instead features a true expletive subject.

- (31) a. German (Schäfer 2007: 298 (60b))
Hier schläft es sich angenehm. / * Hier schläft sich angenehm
here sleeps it REFL comfortable
'It is comfortable to sleep here'
- b. Dutch (Lekakou 2005: 100 (194))
Het zit prima in deze stoel.
it sits fine in this chair
'This chair is fine to sit in.'
- c. Spanish (Internet)
Se duerme bien en los bancos.
REFL sleeps.3S well in the benches
'One sleeps well on benches.'

In Russian too, there is an expletive null subject, while the argument of the modal/adverbial predicate is realized obliquely:

- (32) Russian (Timberlake 2004)
- a. mne ne rabotajet-sja
me.DAT NEG works.3S-REFL
'I don't feel like working.'
- b. mne ne spit-sja
me.DAT NEG sleeps.3S-REFL
'I can't sleep.'
- c. mne xorošo/ ploxo rabotajet-sja
me.DAT well/ bad works.3S-REFL

'I can/cannot manage to work.'

1.2.5 Mediopassive

Mediopassive is a form of the verb which has the morphology of the middle voice, but is nevertheless similar to the passive in that it allows the participation of the external argument. Yet unlike the passive, where the external argument is required in the representation of the verb, the mediopassive allows this argument but does not require it. Mediopassives thus also share properties with middle anticausatives, where the external argument is not included in the derivation. The mediopassive is compatible both with interpretations under which something happens on its own and with interpretations where it is brought about by an external argument. It is thus underdetermined for the passive/ anticausative distinction (cf. Tsimpli 2006).

In some languages, the mediopassive interpretation of the middle voice depends on the lack of dedicated passive voice morphology, either in the language in general, as in Greek, or at least for particular verbs, as in Hebrew:

- (33) a. Greek (Alexiadou et al. 2006)
o jianis dolofonithike apo tin maria
the Janis murder.NACT by the Mary
'John was murdered by Mary.'
- b. Hebrew
dani nircax al-yedey dina
Dani murder.MID by Dina
'Dani was murdered by Dina.'

Yet in both languages, the mediopassive interpretation of the middle voice is limited to particular verbs, and is not general:

- (34) a. Greek (Alexiadou and Doron 2012)
i supa kaike apo moni tis / *apo to jani
the soup burnt.NACT by itself / *by John
'The soup got burnt by itself/ *by John.'
- b. Hebrew (Alexiadou and Doron 2012)
ha-gader hitparqa me-acma / *al-yedey ha-mafginim
the wall dismantle.MID from itself / *by the demonstrators
'The wall fell apart by itself / * by the demonstrators.'

In a limited number of cases, a middle voice verb is interpreted as mediopassive despite the existence of a corresponding passive verb. Interestingly, in the perfective aspect, the same limited class of verbs is found to have this property in French (Zribi-Hertz 1982). The examples below illustrate this class of verbs: (restrictions in the perfective aspect are also noted for Spanish by Mendikoetxea 1999)

- (35) a. French
Le crime s'est commis pendant les heures de bureau.
the crime REFL-is committed during the hours of office
- b. Hebrew

ha-péša' hitbacéa' bi-š'ot ha-'avoda
 the-crime commit.MID in-hours (of) the-work

both: 'The crime was committed during office hours.'

- (36) a. French
 Le texte s'est traduit en moins d'une heure.
 the text REFL-is translated in less of-one hour
- b. Hebrew
 ha-tekst hitargem be-paxot mi-ša'a
 the-text translate.MID in-less of-hour

both: 'The text was translated in less than an hour.'

In the imperfective, middle voice verbs can be generally interpreted as mediopassive:

- (37) a. French (Dobrovie-Sorin 1998: 422)
 De tels objets s'exposent avant de se vendre.
 such objects REFL-display-3PL before to REFL sell
 'Such objects are displayed before being sold.' (generic)
- b. Russian (Blevins 2003: 503(32))
 cerkov' stroit-sja rabočimi
 church.NOM builds.3S-REFL workers.INST
 'The church is being built by workers.' (imperfective)
- c. Spanish (Mendikoetxea 2012: 477)
 Se observan cambios en la economía
 REFL observe-3PL changes in the economy
 'Changes can be observed in the economy.' (imperfective)

The mediopassive differs from the passive in several respects. In Hebrew, it often allows the adjunct *by itself*, and non agentive external arguments, as shown in (38) below, in contrast to the agentive nature of passive external arguments (cf. (4) above). A similar argument is made for Greek by Alexiadou and Anagnostopoulou 2004.

- (38) Hebrew
 ha- be'aya nocra me-'acma / al-yedey išiyut-o
 the problem create.MID from-itself / by personality-his
 'The problem was created by itself/ by his personality.'

Moreover, mediopassives are derived independently of related active verbs, like middle verbs in general (cf. (17)-(18) above), whereas the passive is typically only derived for a corresponding active. The active verbs *anaš 'punish' and *šalam 'complete' corresponding to the mediopassive forms in (39) are not currently in use in Hebrew, and have been replaced by the related causative verbs *he'eniš* 'punish.CAUS', *hišlim*.CAUS 'complete'. Nevertheless, the mediopassive forms of the non-existing verbs are commonly used:

- (39) Hebrew

- a. hu ne'enaš al-yedey yisurey ha-macpun šelo
 he punish.MID by agony (of) the-conscience of-his
 'He was punished by his guilt feelings.'
- b. ha-haxanot nišlemu al-yedey ha-mištatfim
 the-preparations complete.MID by the-participants
 'The preparations were completed by the participants.'

There are therefore arguments for classifying the mediopassive, as well as the dispositional middle of section 1.2.3, as subclasses of the middle voice. Yet this is by no means a settled issue, and these classes are sometimes referred to in the literature as "passive" and "dispositional passive" instead. One way of settling the controversy is by giving up the characterization of the middle voice as maximally contrastive to the passive voice, i.e. as a voice alternation which *reduces* valence. Instead, it could be characterized as a voice alternation which *optionally reduces* valence, while the passive does not reduce valence.

1.2.6 Impersonal mediopassive

There indeed is a middle construction where valence reduction seems not to take place at all, as indicated by the fact that the verb retains accusative case. This is a middle construction with an expletive subject, but, unlike the impersonal middle discussed in section 1.2.4 above, this construction is neither dispositional nor intransitive. Rather, the verb here is eventive and transitive, though the impersonal (human) agent is not explicitly expressed:

- (40) a. French (Dobrovie-Sorin 1998: (66))
 Il s'est lu beaucoup de livres l'année dernière
 it REFL-is.3S read many of books the-year last
 'A lot of books were read last year.'
- b. Spanish (Givón 1990, Ch. 14)
 Se curó a los brujos
 REFL cured.3S ACC the.PL sorcerers
 'The sorcerers were cured.'

2. General/theoretical discussion of voice

Many general questions are raised by voice. Here is a simple one: If both passive and middle are values of the voice dimension, why are they so different in their productivity? In languages of the world, passive is normally productive. In those languages with passive morphology, passive applies to practically all transitive verbs. But the middle, in languages that have it, is lexically restricted. Does this indicate that the two constructions are of a different character, and that we should not classify both as voice? The answer is probably no, passive is productive because it constitutes a less radical departure from the active voice, as it is not valence changing. The middle voice is valence changing, at least potentially, and may thus clash with the lexical requirements of certain verbs for particular arguments.

Other general and theoretical questions have been raised in the course of the study of issues related to voice. Here are several approaches found in the recent literature which have offered generalizations concerning these issues.

2.1. A typological analysis of anticausatives (Haspelmath 1993)

It is natural to expect language to be structurally iconic, i.e. to expect that in general, a complex linguistic form should represent a complex concept. Haspelmath poses an interesting challenge from the subject-matter of voice to the view that language is iconic: "If the semantic properties of a word are only the objective semantic features discovered by semantic decomposition, then causatives are always semantically more complex than inchoatives and the existence of or even preference for anticausatives is a mystery." (ibid: 106). In other words, since causative events are complex, how is it possible that they are sometimes expressed by unmarked active verbs, while their simpler components are expressed by complex middle-voice anticausative verbs? In his article, Haspelmath demonstrates how iconicity can nevertheless be defended, which allows him to conclude that "the challenge to iconicity coming from cases of apparent reverse word-formation could be answered at least for inchoative/ causative alternations. The existence of anticausatives is not a problem because the semantic markedness relationship which iconically corresponds to the formal basic-derived relationship cannot be equated with a basic-derived relationship in the real world. Semantics is conceptual, and our conceptualization of the world reflects it in a way that is profoundly influenced by our conceptual capacities. Only extensive typological comparison has made this conclusion possible." Thus, the complexity of verb forms does not directly represent the complexity of events, but that of their conceptualization. Humans conceptualize some events as being likely to be brought about by an outside force, and other as being likely to happen spontaneously. Unmarked causative verbs are iconic in the case of verbs which denote events that are likely to be brought about by an outside force: *externally caused*. For such verbs, it is less likely that the event will occur spontaneously, and this is expressed by a marked, middle-voice, form of the verb. For such events, the causative is the most probable and expected, whereas the anticausative is marked because it is unexpected. On the other hand, verbs that denote events which normally happen spontaneously will be unmarked in the intransitive form, and marked by causative morphology when they denote the less likely events which include an outside causing force. This does not mean that all languages will categorize each particular type of event in the same way. For example, the verb *finish* encodes an externally caused event in Hebrew, i.e. it has an unmarked transitive *gamar* 'finish tr.' and a marked middle-voice intransitive *nigmar* 'finish.MID' alternant; this is reversed in Turkish, which has an unmarked intransitive *bit* 'finish intr.' and a causative marked transitive *bit-ir* 'finish-CAUS'. The verb *freeze*, on the other hand, has an unmarked intransitive form in Hebrew *qafa* 'freeze intr.' and a causative marked transitive alternant *hiqpi* 'freeze.CAUS'; this is reversed in Spanish, where the intransitive is marked by the middle voice: *congelar-se* 'freeze-REFL' whereas the transitive is unmarked *congelar* 'freeze trans.'. Yet Haspelmath shows that these alternations are not arbitrary or completely language dependent after all. A pattern can be detected when one systematically observes different languages. A universal ranking of predicates emerges: ... P_i ... P_j ... (according to "spontaneity of the event") such that in every natural language, if P_i is

expressed as an unmarked intransitive verb, then so is P_j , and if P_j is expressed as an unmarked transitive verb, then so is P_i . A section of this ranking is shown here:

...	<i>open</i>	...	<i>finish</i>	...	<i>freeze</i>	...	<i>boil</i>	...
	<i>intrans/ trans</i>		<i>intrans/ trans</i>		<i>intrans/ trans</i>		<i>intrans/ trans</i>	
<i>Spanish:</i>	abrir-se/abrir		terminar-se/terminar		congelar-se/congelar		hervir/ hacer hervir	
<i>Hebrew:</i>	ni-ftax/ patax		ni-gmar/ gamar		qafa/ hi-qpi		ratax/ hi-rtiax	
<i>Turkish:</i>	aç-il/ aç		bit/ bit-ir		don/ don-dur		pis/ pis-ir	

Languages differ in the precise point at which they switch the conceptualization of events from externally caused to spontaneous. Spanish views *open*, *finish* and *freeze* as describing externally caused events, and thus their intransitive variants are marked by the middle voice. But once it switches to viewing the intransitive verb as unmarked, it will keep on doing so for events which are more and more spontaneous (presumably such as *jump*, *laugh* etc). This is corroborated by Hebrew and Turkish, which switch to unmarked intransitives earlier than Spanish, and do not switch back.

2.2. A functionalist analysis of the middle voice (Kemmer 1993)

Kemmer's 1993, 1994 achievement is in demonstrating that it is the same verbs which systematically appear with middle morphology across a large number of unrelated languages. Moreover, she shows that these verbs can be classified into a relatively small number of semantically coherent classes:

(41)

- a. verbs of grooming or body care: dress, wash, shave
- b. nontranslational motion: stretch, turn, bow
- c. change of body posture: sit down, kneel, get up, lie down
- d. translational motion: climb up, go away, stroll, fly
- e. naturally reciprocal events: embrace, wrestle, converse, speak together
- f. indirect middle: acquire, ask, request, take for oneself, desire, crave
- g. emotional middle: become frightened, become angry, grieve, mourn
- h. emotive speech actions: complain, lament
- i. cognition middle: cogitate, reflect, consider, ponder, meditate, believe
- j. spontaneous events: sprout, stop, vanish, recover, originate, occur
- k. facilitative situations: dispositional middles and mediopassives

Kemmer concludes that there is a conceptual basis which underlies not only the anticausative (as shown by Haspelmath), but the middle voice as a whole. Kemmer views the distinction between transitive and intransitive clauses as expressing the edges of a continuum (following Hopper and Thompson 1980) between two- and one-participant events. She proposes to "add the middle to the event space defined by these situation types and to the parameter along which they differ, namely the degree of discernibility of the participants... Two-participant events have maximal distinguishability of participants in that the participants are completely separate entities. The reflexive and middle have progressively lower distinguishability, which means that the Initiator (controller or conceived source of action) and Endpoint (affected participant) are not separate, but necessarily the same entity." (Kemmer 1994: 209). Kemmer shows that her proposal subsumes Benveniste 1950, Gonda 1960, Klaiman 1991, who view subject-affectedness as the defining characteristic of

the Indo-European middle. In Kemmer's framework, the subject of a middle-voice verb is affected since it is not distinguished from the affected participant.

2.3. A syntactic analysis of the passive voice (Baker, Johnson and Roberts 1989)

Baker, Johnson and Roberts 1989 establish the status of the passive as a voice which does not alter the number of arguments of the verb. Though arguments had been previously adduced, Baker et al. provide the decisive argument. We first present earlier arguments due to e.g. Manzini 1983, Keyser and Roeper 1984, Roeper 1987. First, passive clauses allow an overt *by*-phrase licensed by the implicit subject, (42a), whereas unmarked anticausative clauses do not, (42b):

- (42) a. The ship was sunk by Bill.
b. * The ship sank by Bill.

Second, subject-oriented adverbs may modify the implicit subject of the passive, (43a), though this is not so in the case of the anticausative, (43b):

- (43) a. The ship was sunk deliberately.
b. # The ship sank deliberately.

Third, the missing subjects of rationale clauses may be controlled by the implicit subject of the passive, (44a), though this is not so in the case of the anticausative, (44b):

- (44) a. The ship was sunk to collect the insurance
b. * The ship sank to collect the insurance

The novel argument provided by Baker et al. (based in part on Williams 1987) which establishes that the passive argument is syntactically active, is that there is a restriction on the interpretation of the understood passive subject. The passive subject is known to be interpreted as existentially quantified, e.g. (45a) is understood as "Someone/ something killed him.":

- (45) a. He was killed
b. He was seen

What Baker et al. noticed is that passives cannot be interpreted in such a way that the understood subject is coreferential with the surface subject, ie (45) cannot mean (46):

- (46) a. He committed suicide
b. He saw himself

Baker et al. further note that non-coreferentiality cannot be attributed to a pragmatic effect due to the absence in the structure of the passive argument. Other types of structures with missing arguments do not prevent coreference of an expressed argument with a missing argument. For example, in adjectival passives, such as (47a), the missing subject can be understood as coreferential to the surface subject, i.e. John

could have shaved himself. Similarly in (47b), whether it is understood dispositionally or not, there is no ban against John being the one doing the shaving:

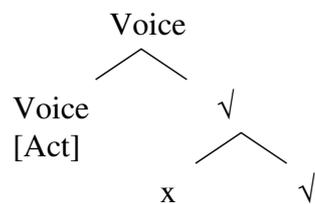
- (47) a. John is freshly shaved
 b. John shaves easily

2.4. A Distributed Morphology analysis of voice (Doron 2003; Alexiadou, Anagnostopoulou and Schäfer 2006)

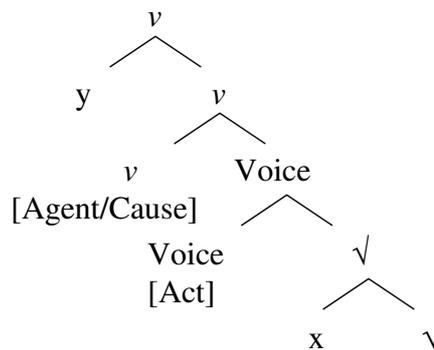
Within a constructional approach to morphology (the Distributed Morphology framework of Halle and Marantz 1993, and the framework of Kratzer 1996, 2002), where words are not constructed in the lexicon but as part of the syntactic derivation of the clause, several proposals have converged to an account of voice (Embick 1997, 2004; Doron 2003; Alexiadou and Anagnostopoulou 2004; Alexiadou, Anagnostopoulou and Schäfer 2006; Kallulli 2006; Labelle, 2008). Roughly, all these accounts include in their syntax a functional head: *Voice*, which regulates the insertion of the external argument required by the verb's root. The values of Voice discussed in these approaches are Active, Middle and Passive. The non-active (NACT) morphology found in Greek and Albanian is viewed as syncretizing Middle and Passive (but see Embick 1997, Alexiadou and Doron 2012 for a different view of Greek non-active morphology).

The active Voice does not interfere with the cooccurrence restrictions of the root. For example, the English root *destroy* requires an external argument (with the thematic role of cause assigned by the appropriate functional head *v*), whereas the root *arrive* does not cooccur with an external argument. The roots *dry* and *whiten* allow an external argument, but do not require one:

- (48) a. Active voice
 arrive
 dry (intr.)
 whiten (intr.)



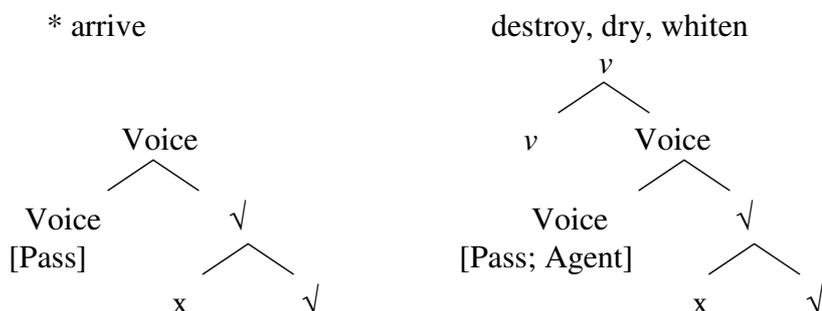
- b. destroy
 dry (trans.)
 whiten (trans.)



Even in languages with middle-voice morphology, there are active anticausatives constructed as in (48a), eg *hilbin* 'whiten' in Hebrew, and *stegnosan* 'dry' in Greek, which are active verbs.

The passive Voice, following Baker et al. 1989, introduces an external argument in the environment of exactly the same roots as in the active, and is thus impossible in (49a).

- (49) Passive voice
a. * arrive



Similarly to Baker et al., it is the head v itself which is the external argument of the passive. In Hebrew and Greek, the argument of the passive Voice is an agent, thus accounting for the fact that the Hebrew *hulban* whiten.PASS 'was whitened' and the Greek *stegnothikan* dry.NACT 'was dried' can only be interpreted with an agentive by-phrase, though the active can take a cause argument:

- (50) a. Greek (Alexiadou et al. 2006)
 ta ruha stegnosan/*stegnothikan apo ton ilio
 the clothes dried.ACT/*dried.NACT from the sun
 'The clothes dried (*were dried) from the sun.'
- b. Hebrew
 ha-kvisa hilbina /*hulbena me-ha-šémeš
 the-laundry whitened.ACT/*whitened.PASS from-the-sun
 'The laundry whitened (*was whitened) from the sun.'
- (51) a. Greek (Alexiadou et al. 2006)
 ta mallia mu stegnothikan/*stegnosan apo tin komotria
 the hair my dried.NACT /*dried.ACT by the hairdresser
 'My hair was dried by the hairdresser.'
- b. Hebrew
 ha-kvisa hulbena /*hilbina al-yedey ha-kovéset
 the-laundry whitened.PASS/*whitened.ACT by the-laundress
 'The laundry was whitened (*whitened) by the laundress.'

The middle Voice head does not cooccur with v , i.e. it does not have an external argument. Yet in the environment of some roots, it assigns the agent thematic role to the argument x of the root, such as in e.g. (52b). Since it alters the thematic role of the internal argument, the middle Voice is merged with the root in (52). This is different from the passive voice, which alters the thematic role of the external argument, and thus merges above the internal argument in (49) above. The different level of attachment accounts for the lower productivity of the middle in comparison to the passive, and also for the fact that passive forms are only derived for corresponding active forms, whereas middle verbs are derived independently of related active verbs.

- (52) Middle voice
- a. destroy, wash
-
- b. destroy, wash, comb
-

The structure in (52b) derives a reflexive interpretation, for example in the following:

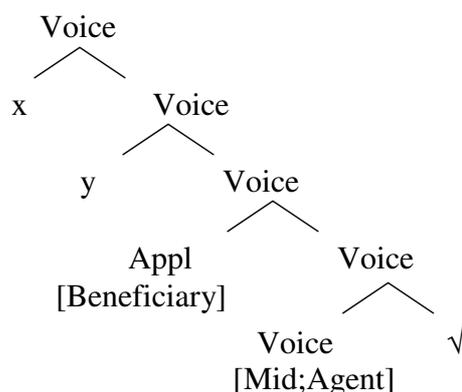
- (53) a. Greek (Embick 2004)
 i maria htenizete kathe mera
 the Mary combs.NACT every day
 'Mary combs her hair every day.'
- b. Hebrew
 dina mistareqet kol yom
 Dina combs.MID every day
 'Dina combs her hair every day.'

Some verbs in Greek require *afto* when the roots appears in the (52b) rather than the (52a) structure. In Hebrew this is sometimes indicated by the contrast between the two middle forms, the simple middle (MID.SIMPL) which tends to be medio-passive, vs. the intensive middle (MID.INTNS) which tends to be agentive:

- (54) a. Greek (Embick 2004)
 to hirografo katastrafike apo tin pirkagia
 the manuscript destroyed.NACT by the fire
 'The manuscript got destroyed by the fire.'
- b. Hebrew
 ha rexovot nirxacu me-ha-gésem
 the street washed.MID.SIMPL from-the-rain
 'The streets got washed by the rain.'
- (55) a. Greek (Embick 2004)
 i maria afto-katastrefete
 the Mary self-destroys.NACT
 'Mary destroys herself.'
- b. Hebrew
 ha-yeladim hitraxacu
 the-children washed.MID.INTNS
 'The children washed themselves.'

According to this analysis, in the case of deponent verbs (middle-voice verbs which may have two internal arguments), the additional internal argument, e.g. a beneficiary, is introduced by an applicative head. The middle Voice may assign the agent thematic role to the applicative argument *y* in (56):

- (56) Middle voice (for Root + Applicative)
use, need



The examples in (57) illustrate the structure (56) in Greek and Hebrew. In Hebrew, the root argument *x* in (56) is typically oblique in the middle derivation, but it is possible to find accusative arguments, as in Greek:

- (57) a. Greek
metahirizome to leksiko
use.NACT.1S the dictionary.ACC
'I use the dictionary.'
- b. Hebrew
eštameš b-a-milon
FUT.1S.use.MID OBL-the-dictionary
'I will use the dictionary.'
- c. Hebrew
ectarex et-ha-milon
FUT.1S.need.MID ACC-the-dictionary
'I will need the dictionary.'

In conclusion, there is a kernel concept of *voice* compatible with the different points of view of various linguistic approaches, which denotes alternation in the assignment of grammatical functions to the verb's arguments, often marked by verbal morphology, and driven by change/ reduction of the expression of the verb's external argument.

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