

## The notion of instrument in Malay language

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In Malay, the official language of Malaysia, the notion of instrument is expressed in five ways. In the first two expressions the noun instrument is introduced by either the preposition *dengan* 'with' or the preposition *melalui* 'through, via': <X Z=Action {*dengan*, *melalui*} Y=Instrument> (e.g. *Remaja pukul ibunya dengan batang paip* 'An adolescent hit his mother with a pipe', *menghantar bantahan melalui e-mel kepada Dr. X* 'to send a protest through email to Dr. X'). The third expression corresponds to the introduction of the noun instrument by the compound preposition *dengan menggunakan* 'by using, with': <X Z=Action *dengan menggunakan* Y=Instrument> (e.g. *Dia didakwa melakukan samun dengan menggunakan sebilah pisau* 'He was accused of mugging with a knife'). The fourth expression includes the verb *menggunakan* 'to use' and the preposition *untuk* 'for': <X *menggunakan* Y=Instrument *untuk* Z=Action> (e.g. *orang ramai boleh menggunakan talian hotline ini untuk menyalurkan maklumat* 'many people can use the hotline link to send the information'). The fifth and last expression is done by transforming a noun instrument into an instrumental verb (e.g. *gunting* 'scissors' > *menggunting* 'to cut (with scissors)', *gergaji* 'saw' > *menggergaji* 'to cut (with a saw)', etc.).

All these expressions show some constraints on the type of nouns that are used as instrument. This study has two main related goals. The first objective is to establish a semantic typology of nouns that are used as instrument for each of the five expressions of instrumentality. The second objective is to determine the semantic classes of verbs that cooccur with each of the defined class of nouns. We conduct the study on attested corpus examples. The corpus, containing 545806 tokens and 26581 types, consists of texts extracted from one Malaysian newspaper during the year 2003.

Prepositions have different functions. They head prepositional phrases (syntactic function). They relate noun phrases to other units in the sentence (semantic function). They form phrasal verbs as in *berkaitan dengan* 'to be connected with', *berkerjasama dengan* 'to collaborate', etc. In addition to these functions, most prepositions are polysemous. For example, the preposition *dengan* has nine meanings as defined in the fourth edition of *Kamus Dewan* (KD), a Malay monolingual dictionary. To complicate the study, the word *melalui* can be either a verb or a preposition. Our first and difficult task is to distinguish and extract from the corpus only the examples where these two prepositions denote instrumentality. The following examples show the different types of nouns used as instruments and that cooccur with the two prepositions:

- *dengan* <MEANS OF TRANSPORT>: *ambulans* 'ambulance', *bas* 'bus', *basikal* 'bicycle', *bot* 'boat', *kenderaan* 'vehicle', *kereta* 'car', *lori* 'lorry', *motosikal* 'motorcycle', *pesawat* 'aircraft', *teksi* 'taxi';
- *melalui* <MEANS OF TRANSPORT>: *kapal Cormo Express* 'Cormo Express ship';
- *dengan* <MEDIUM>: *akhbar* 'newspaper', *komputer* 'computer', *media*, *Pos Malaysia Berhad* '(the Malaysia Post)', *stesen televisyen tempatan* 'local television station';
- *melalui* <MEDIUM>: *earphone*, *e-mel* 'email', *e-Permohonan* 'e-Application', *faks* 'fax', *faksimili* 'facsimile', *Internet*, *komputer* 'computer', *komunikasi maya* 'virtual communication', *laman web* 'website', *media*, *mel elektronik* 'electronic mail', *pejabat pos* 'post office', *persidangan video* 'video conference', *pos* 'post', *poster*, *program interaktif* 'interactive program', *proksi* 'proxy', *remote sensing*, *risalah* 'brochure', *siaran media* 'broadcast media', *sistem e-Tiket* 'e-Ticket system', *SMS*, *surat* 'letter', *surat khabar* 'newspaper', *talian bebas tol* 'toll free line', *telefon* 'telephone', *udara* 'air', *VCD*, *video*.

The syntactic construction <X *menggunakan* Y=Instrument *untuk* Z=Action> is used mainly for conceptual metaphors. The noun Y is considered as an instrument that performs the action Z, which is not its usual function. For example, in the sentence *ada pihak yang menggunakan orang kurang upaya untuk mengaut keuntungan* 'there is a party who used handicapped people to make a profit', 'handicapped people' is used as an instrument to make a profit. There is only one example in our corpus in which Y is a genuine instrument: *pihak bomba menggunakan gergaji untuk memotong sebahagian badan kereta berkenaan* 'firemen used saws to cut a part of the body of the concerning car'. But in this example, a saw is used to cut a car which is not its usual function. A saw is normally used to cut wood.

We consider as genuine instruments, all nouns that can derive a verb with the prefix *meN-*. As it is expected, not all nouns that are defined or considered as instruments can derive instrumental verbs. For example, most of musical instruments do not derive verbs. The verb *memarang* 'to cut (with a machete)' is derived from the noun *parang* 'machete' which is defined as 'a big knife' by KD. But the noun *pisau* 'knife' does not derive the verb \**memisau*. This means that common lexical semantic relations like synonymy or hypernymy/hyponymy cannot be used to determine the class of genuine instruments. The determination is done only by looking at the meaning of the derived verb with *meN-*.