Verb particles in Dutch

Transfer rules:
As an example the verb "af+wijzen" which is a transitive verb

```
\{VP-TRANS,1\}
VP::VP \rightarrow \{VERB\ NF\}
\{ x_1::y_1 \}
\{ x_2::y_2 \}
\{ x_1\ verbparticle\} = \"UNDEFINED\"
\{ x_0=x_1 \}
\}

\{VP-TRANS,2\}
VP::VP \rightarrow \{VERB\ NF\ VERBPART\}
\{ x_1::y_1 \}
\{ x_2::y_2 \}
\{ x_1\ verbparticle\} =c\ (x_3\ verbparticle)\}
\{ x_0=x_1 \}
\}

VERBPART::VERBPART \rightarrow \{[\"af\"]\}
\{ x_1::y_1 \}
\{ x_0\ verbparticle\} = \"af\"
\}

VERB::VERB \rightarrow \{[\"wijzen\"]\}
\{ x_1::y_1 \}
\{ x_0\ verbparticle\} = \"af\"
\}
```

So all rules with the verbparticles require to have the right particle, while all other verb rules require to be "empty"

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Basic test:

<table>
<thead>
<tr>
<th>Dutch</th>
<th>gloss</th>
<th>output</th>
<th>correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>ik haal de auto in</td>
<td>i get the car in</td>
<td>i overtake the car</td>
<td>√</td>
</tr>
<tr>
<td>ik haal de auto</td>
<td>i get the car</td>
<td>i get the car</td>
<td>√</td>
</tr>
<tr>
<td>Test with negation:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ik haal de auto niet in</td>
<td>i get the car not in</td>
<td>i do not overtake the car</td>
<td>√</td>
</tr>
<tr>
<td>ik haal de auto niet</td>
<td>i get the car not</td>
<td>i do not get the car, i get the car not</td>
<td>overgenerates</td>
</tr>
</tbody>
</table>

Text with a really long dependency zit+voor → chair:

<table>
<thead>
<tr>
<th>Dutch</th>
<th>gloss</th>
<th>output</th>
<th>correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>ik zit de vergadering van de europese unie voor het volk voor</td>
<td>i sit the meeting of the european union for the people before</td>
<td>i chair the meeting of the european union for the people (and 954 other translations, but all with &quot;i chair&quot;)</td>
<td>√</td>
</tr>
</tbody>
</table>

Trying ditransitive

<table>
<thead>
<tr>
<th>Dutch</th>
<th>gloss</th>
<th>output</th>
<th>correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>ik geef hem zijn book terug</td>
<td>i give him his book back</td>
<td>i return his book</td>
<td>√</td>
</tr>
</tbody>
</table>

split verb particle "door elkaar"+halen

<table>
<thead>
<tr>
<th>Dutch</th>
<th>gloss</th>
<th>output</th>
<th>correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>ik haal de europese unie met de amerikaanse staat door elkaar</td>
<td>I get the european unie with the american state through eachother</td>
<td>i confuse the european union with the american state (and 62 other translations, sentence over generates, has 2 parses)</td>
<td>overgenerates</td>
</tr>
</tbody>
</table>
List of added verb+particles

in-halen (in+get) <-> overtake
door-gaan (through+go) <-> continue
toe-treden (to+step) <-> join (as in become a member)
goed-keuren (goed+check) <-> approve
vast-stellen (fixed+declare) <-> note (as in observe)
voor-stellen (pro+declare) <-> propose
aan-stippen (on+"making-dots") <-> note (as in emphasize)
mee-maken (with+make) <-> experience
in-stemmen (in+vote) <-> support, approve
toe-spreken (to+speech) <-> address
toe-kennen (to+recognise) <-> allocate, grant, give
in-zien (in+see) <-> realise, see
toe-nemen (to+take) <-> increase
over-nemen (over+take) <-> adopt
toe-zien (to+see) <-> ensure, monitor, enforce
voort-zetten (onwards+put) <-> continue (formal)
voor-zitten (before+sit) <-> chair (lead a meeting)
uit-vallen (out+fall) <-> appear (lit. stop functioning, but in text it always appears in kind of a proverb ial way)
in-voeren (in+feed) <-> introduce
toe-staan (to+stay) <-> allow
geluk-wensen (luck+wish) <-> congratulate
eens-zijn (once+be) <-> agree (the origine is once as in "the same" (opinion), i guess)
in-zetten (in+put) <-> involve, take part
uit-voeren (out+feed) <-> execute
over-laten (over+leave) <-> leave (like in left-over)
in-dienen (in+serve) <-> introduce, submit
invloed-uit-oefenen (influence+out+serve) <-> influence
plats-vinden (place+find) <-> happen, occur
bij-dragen (by+carry) <-> contribute
toe-voegen (till+"join") <-> add
akkord-gaan (accord+go) <-> approve, agree
terug-vinden (find+back) <-> find
op-richten (op+raise) <-> found, create, establish
af-stemmen (off+vote) <-> coordinate
mee-doen (with+do) <-> participate
af-wijzen (off+point) <-> reject
te berde-brengen (+bring (archaic dutch) ) <-> raise (raise a point)
aan-leren (on-teach/learn) <-> learn
op-leveren (up+deliver) <-> yield, produce
te weten-komen (to knowledge+come) <-> find out
door elkaar-halen (through eachother+get) <-> confuse, mix up
voor elkaar-krijgen (before eachother+receive) <-> achieve
ongedaan-maken (undone+make) <-> undo
op-nemen (up+take) <-> include
deel uit-maken (out+make) <-> form part
op-heffen (up+lift) <-> lift (end something as in close a meeting)
op-stellen (up+declare) <-> draw up
samen-hangen (together+hang) <-> be connected
het risico-lopen (the risc-walk) <-> be in danger
nodig-hebben (necessary-have) <-> need
rop-wijzen (there-up+point) <-> emphasize
bijdrage-leveren (contribution+deliver) <-> contribute (formal)
samen-gaan (together+go) <-> unite
samen-smelten (together+melt) <-> fuse, combine
terug-geven (back+give) <-> return (items)
voor-zitten (before+sit) <-> chair (a meeting)