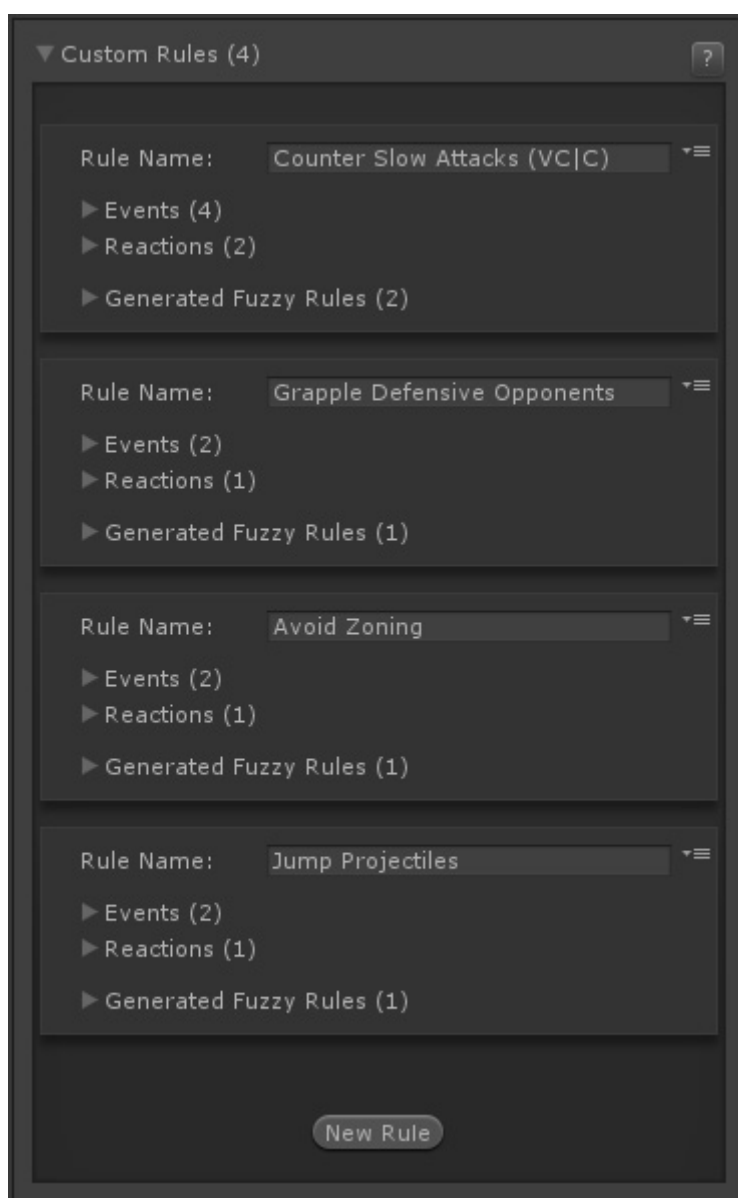# Custom Rules

Here you can design your own fuzzy rules with an intuitive logic process. Fuzzy Logic operates with Linguisit Variables to facilitate the weight calculation process.

This process uses `.\UFE Addons\Runtime\AIRulesGenerator.cs` to automatically generates its own fuzzy rules.

Rule

A rule is a set of events and conditions that tell the engine how likely a reaction should be.

This interface was created to better emulate linguist variables into UFE through its events and conditions. From a logical operator point of view, think of events, conditions and reactions with the following operators:

```
IF (Condition1 AND Condition2 AND …) OR (Condition3 AND Condition4 AND …)
THEN [Reaction] is [Desirable Value]
```

Where:
(Condition1 AND Condition2 AND …) Equals Event1
(Condition3 AND Condition4 AND …) Equals Event2
And so on…

The linguistic variables used by the engine are a direct translation of this conditioning system, and they can be seen by clicking on *Generated Fuzzy Rules*.

By default, every reaction has 0 weight, and by default, if no weight is applied to reactions, the character should stay idle.

Rule Name: Use this to make a small description of what the rule is suppose to do.
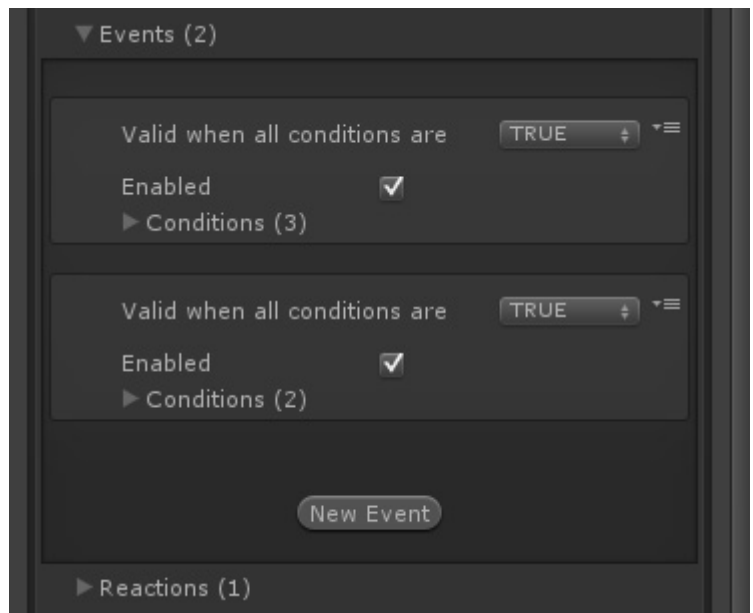
Event

Events contain conditions. A Rule is valid when at least one of the events is **valid**.

Valid when all conditions are: Allow you to invert the logic of this event. If set to *FALSE*, this event will be considered as a valid entry for the Reaction weight manipulation if its <u>not</u> *TRUE*.

Condition

An event is only valid if all of its conditions are **valid**.

Valid when condition is: Allow you to invert the logic of this condition. If set to *FALSE*, this condition will be considered to be valid if the dictated entry is <u>not</u> *TRUE*.

Reaction

When the conditions for one of the events is true, how likely is the AI to attempt the following reaction.

Generated Fuzzy Rules

Allows you to read the result of all the rules being generated by these options. Useful to debug how each combination interact and the end result that is sent to the Fuzzy Core.

This option is for debug viewing only and it has no impact on the game.

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