

Modeling Social Practices in THE SIMS

Abstract

Contents:

1. The problem. The Sims didn't understand social norms.
2. The solution: give them an understanding of social practices
3. Limits to the solution
4. Related work

1. The Problem: Sims didn't understand social norms

In previous versions of THE SIMS, the Sims had no understanding of social norms. To give just one example: my Sim had asked another Sim to come over to his house. But after he had invited her in, my Sim just walked off (to have a bath), leaving his guest entirely on her own.

This faulty behavior arose because the Sim did not understand that, after having invited his guest, there was an expectation to look after her. He violated the norm because he was unaware of it.

2. The Solution: Give the Sims a (crude) understanding of these norms

For the latest iteration of THE SIMS, we have given the Sims a crude understanding of social norms, and have found this has made a real difference to their perceived believability.

2 (a) A social practice is a hierarchy of clusters of norms

Norms do not come singly, as individual rules which can be learned separately. They come in *clusters*.

For example, the¹ social practice of Visiting between a guest and a host, involves a number of expectations:

- The host should look after the guest
- The guest should not over-step the bounds of hospitality
- The host may ask the guest to leave if he does over-step the bounds of hospitality

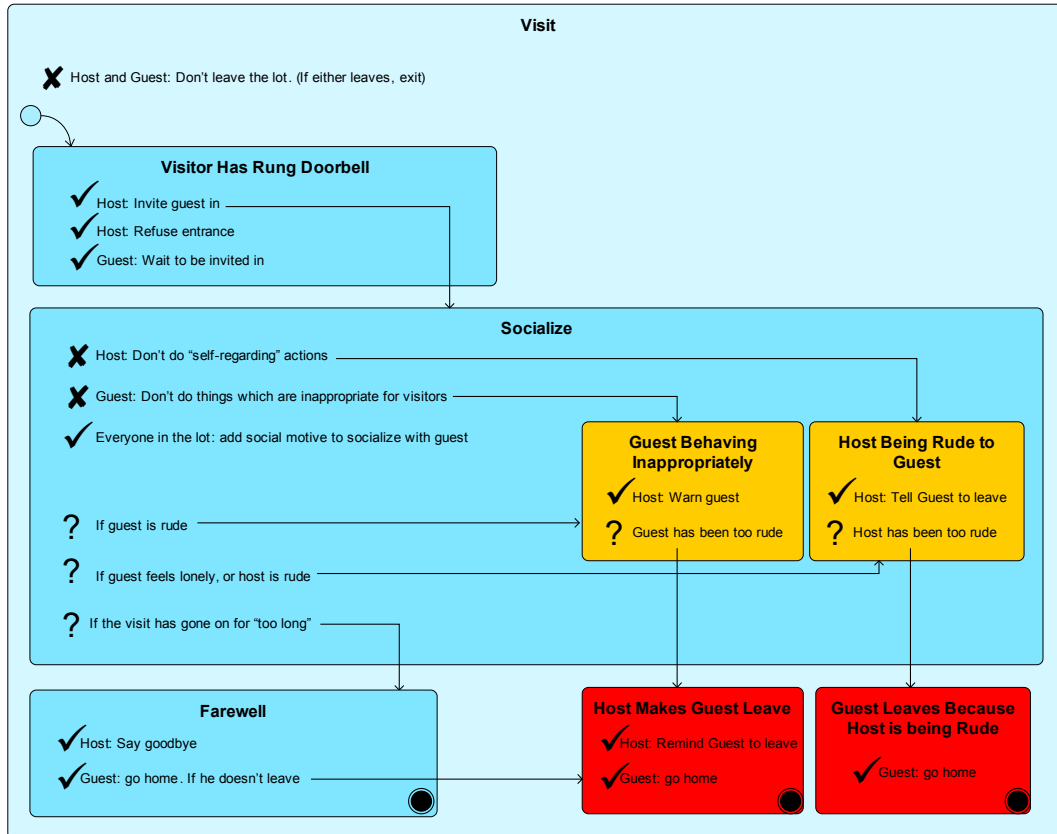
A *social practice* is a tree of clusters of expectations. A practice can issue different requests in different states, notice when requests are performed, and change state accordingly.

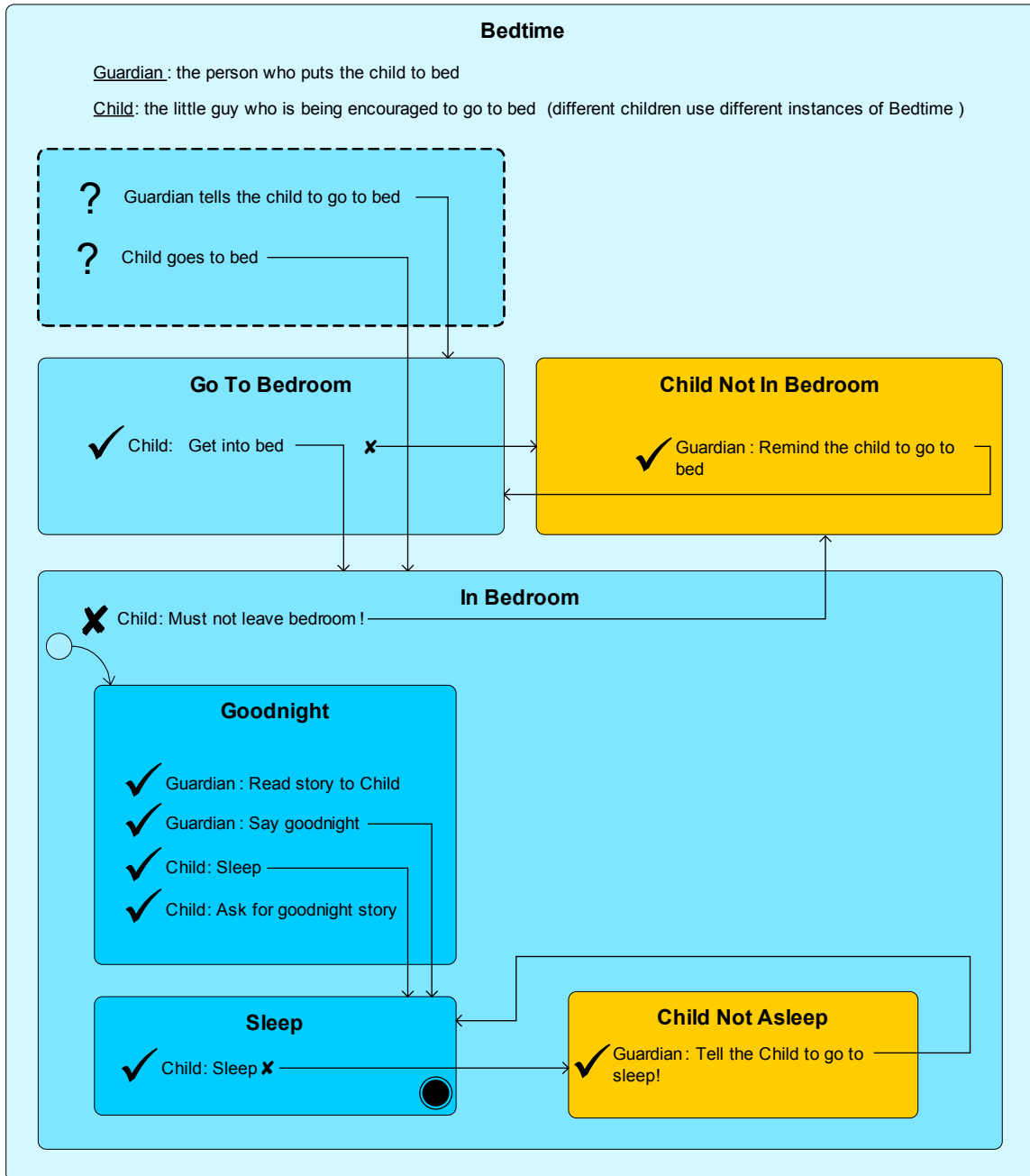
A practice is the most specific natural kind which contains both games and languages as sub-classes. (A “language-game” where the hyphen is interpreted as a *range*, as in “1-5”).

¹ Of course it is a simplifying assumption to speak of one unique Visiting practice. There are lots of different types of Visiting practice for different cultures and sub-cultures, with differing expectations.

2 (b) Some examples of social practices

These practices can be described succinctly using UML (the Unified Modeling Language). Here are two examples of practices we have modeled for THE SIMS:





2(c) How social understanding makes the Sims more believable

Many social practices are constitutive rather than merely regulative: they don't just rule-out certain behavior, but enable new actions. To take a familiar example, you can utter the sounds of the words "I do" whenever you like, but you can only *get married by saying "I do"* within the social practice of the marriage ceremony.

Some concrete examples from our latest version of THE SIMS:

- You can only *ignore someone* who is expecting to be talked to
- You can only *stand someone up* who is on a date
- You can only *tell off a child for staying up past his bedtime* within the context of a bedtime practice which establishes the notion of bedtime

In each case, the italicized actions are only intelligible because of the social practice in which they are embedded. Being in social practices gives the Sims more to do.

2(d) Agent architecture: agents resolve requests from many social practices

An agent can be in many social practices at once. “It is frequently the case that many different transactions are taking place at one and the same time between members of the same group. Not one game is being played, but several”. (MacIntyre, *After Virtue*).

A concrete example from our latest version of THE SIMS: if you invite your boss over for dinner, you and your boss are in three practices at once: Visiting, Mealtime, and Boss-Talking-With-Subordinate. Each of these practices has its own expectations. Sometimes these expectations can conflict.

At any moment, the Sim is faced with many different requests from many practices. He must decide which request to act upon. He understands each request as satisfying a subset of his desires, and chooses the request which best satisfies his current desires.

3 Limits to the Current Implementation

Our implementation of social understanding in the latest version of THE SIMS is a step forward from previous versions, but it is still fundamentally limited.

There are three limitations:

- a) They do not score-keep
- b) They cannot discover new practices
- c) They are heteronomous, not autonomous

3(a) The Sims do not do scorekeeping

The individual Sims do not keep track of their own models of the social practices² (for purely practical reasons to do with keeping memory overhead down). Instead, the system keeps track of the state of each practice, and each agent “magically” receives this information. This means that in our current implementation, there is no possibility of divergence of understanding as to how the practice is going.

3(b) The Sims cannot discover new practices

² See David Lewis, *Scorekeeping in a Language Game*, and Robert Brandom, *Making It Explicit*

In our current implementation, the set of social practices which the Sims understand is fixed at design-time. They will never learn a new practice while playing.

3(c) The Sims are heteronomous, not autonomous

The Sims decide which practice to act on by scoring the requests according to their desires, but they are, as it were, prisoners of their own desires: they cannot but act on them. There is no possibility of them evaluating one of their motives, finding it lacking, and replacing it with another. They are trapped in their own desires.

4 Related work

Moses and Tenenholz have done very interesting work on computational models of social practices³.

They define a normative system as a set of restrictions on available actions such that, within these restrictions, there is a guarantee that a certain desirable condition obtains. Part of the power of their work is that, using a type of modal propositional logic, they can prove that certain norms guarantee certain desirable properties.

Their approach is different from ours in that:

- Their social norms are atomic and self-contained (rather than embedded within a hierarchical cluster of norms)
- Their social norms are restrictive – their norms rule out certain actions rather than enabling new options
- Their work assumes that agents' goals are given prior-to and independent of the social practices