

Gender Identity, Roleplay, and Character Gender Selection in NetHack

Soren Bjornstad

December 12, 2012

Contents

1 Purpose	2
2 NetHack	2
2.1 NetHack as a Role-Playing Game	2
2.2 Gender in NetHack	3
3 Survey Design	4
3.1 Data Sources	5
3.2 Player Questions	6
3.3 Character Questions	6
3.4 Bias	6
3.5 Mid-Survey Changes	7
4 Results	7
4.1 Player Demographics	8
4.2 Overall Character Gender Preference	9
4.3 Preference By Player Gender	10
4.4 Preference By Player Gender – Practical Considerations Removed	10
4.5 Prevalence of Role-Playing Mindset	12
4.6 Character Gender Preference due to Player Gender Identity	13
5 Conclusion	13
5.1 Ideas for Further Research	14
6 Notes	14
7 References	14

1 Purpose

To determine: *a)* general demographics of NetHack players; *b)* if players have practical reasons for choosing the in-game gender they do; *c)* if not, what other reasons people have, to what extent people role-play by selecting gender, and how many people play a different gender from their real-life self.

2 NetHack

NetHack is a roguelike* game in which one descends approximately 50 dungeon levels in search of the legendary Amulet of Yendor. It incorporates elements from various works of literature, historical events, systems of mythology, and popular culture. It is extremely difficult to master; some players claim to have played for ten years or more without ever winning (*ascending* in NetHack parlance). This is primarily because death is permanent—if a player dies, he or she must start the entire game from the beginning again.† While this can be frustrating, it is not usually boring since the new game will be very different from the previous one.

NetHack is usually played at a text-based terminal, with monsters, the dungeon, and objects represented as ASCII characters‡ and the player as a friendly @ sign. [1]

NetHack has nothing whatsoever to do with hacking the Internet, despite the name. The name comes from the older game *Hack* and the fact that the game’s development was coordinated over the net (unusual when NetHack development began in 1987) [1].

2.1 NetHack as a Role-Playing Game

The third part of my purpose statement related to the extent to which people role-play with their gender selections in NetHack. It has been debated whether or not NetHack is a role-playing game. Of course, this begs the question of what exactly a “role-playing game” *is*. Here’s what Wikipedia says:

A role-playing game is a game in which players assume the roles of characters in a fictional setting. Players take responsibility for acting out these roles within a narrative, either through literal acting, or through a process of structured

*Roguelikes are named after *Rogue*, the first game of its kind. Roguelikes are generally characterized by random environments (the game never plays out the same way twice), permanent death (players cannot restore from a savefile when they mess up), multiple plausible creative solutions to common problems, and turn-based play (players can think as long as they wish or even save the game and wait a few days if they need time to think about what to do). [8]

†Strictly speaking, it is possible to save the game and back up one’s savefile, then restore it upon death. This practice is referred to as *savescumming* in the NetHack community and is generally frowned upon and considered not only cheating but highly detrimental to one’s playing skills. Any ascensions gained by savescumming are unlikely to be considered valid, and most players find that it takes all the fun and challenge out of the game. [9]

‡ASCII stands for *American Standard for Computer Information Interchange*. ASCII symbols consist primarily of the characters found on a standard keyboard. [10]

decision-making or character development. Actions taken within many games succeed or fail according to a formal system of rules and guidelines. . . .

Despite this variety of forms, some game forms. . . may not be included. Role-playing activity may sometimes be present in such games, but it is not the primary focus. [3]

In general, I think the answer to this question for NetHack depends entirely on the individual player. NetHack certainly meets the criteria to be considered a role-playing game: players “assume the roles of characters in a fictional setting,” and the results of players’ actions are formalized. However, the last sentence is crucial: “Role-playing activity may sometimes be present in [such] games, but it is not the primary focus.” To me, a game cannot possibly be considered a role-playing game if its players do not think of themselves as playing a role-playing game. Many NetHack players do not really think of themselves in their character’s shoes or play the game for the role-playing possibilities. However, many others do. For those that do, character selection, including the character’s gender, is likely to be important.

2.2 Gender in NetHack

At the beginning of a game of NetHack, one may select a role, race, alignment, and gender for one’s character.* It is also possible to allow the game to choose a random value for one or more of these options.

Not all of the latter three options are available for every role[†]; for instance, if one wishes to play a Knight, the character is required to be human (race) and lawful (alignment), and thus the player may only select a gender. Gender is binary in NetHack: one may not select any value other than *male* or *female*.

All roles may select their gender except the Valkyrie. This is a notable omission, partly because of lore (the Norse valkyries were indeed always female), but partly because that role is generally considered the easiest in NetHack, making it one of the more widely played for beginning players. [4] This will become important later in my analysis.

The gender one selects for one’s character has very little effect on the game. Here is a complete list of all the effects of character gender in NetHack:

- Female characters can lay eggs when polymorphed[‡] into a monster that lays eggs;

* *Roles*: Archaeologist, Barbarian, Caveman, Healer, Knight, Monk, Priest, Rogue, Ranger, Samurai, Tourist, Valkyrie, and Wizard. *Races*: human, elf, gnome, dwarf, and orc. *Alignments*: Lawful, Neutral, and Chaotic. *Genders*: male, female.

[†]There are $(13 \text{ roles} \cdot 5 \text{ races} \cdot 3 \text{ alignments} \cdot 2 \text{ genders}) = 390$ possible permutations of character. Only 73 combinations are valid with these restrictions. [6, 7]

[‡]Polymorphing temporarily gives a character many of the attributes of a monster. For instance, if the character polymorphs into a dragon, he or she will be displayed as a dragon, be too large to fit into armor, have no hands, be very strong, bite monsters upon attack, and be able to breathe fire or another element. For all the apparent usefulness of polymorph, polymorphing oneself is relatively uncommon, as it is rarely necessary, requires specific items, can make it easier to die a stupid death, and has other drawbacks. However, it can be extremely helpful or even the only way to achieve a particular effect in specific circumstances.

the monsters that hatch will be tame.* However, eggs found on the ground by female characters will never hatch tame. Eggs found by male characters, on the other hand, may hatch tame, but male characters cannot lay eggs.

- Female characters are seduced by incubi; males are seduced by succubi.[†] Incubi and succubi are almost identical monsters and have the same beneficial and harmful effects; the only difference is which gender of player they will be friendly to. Incubi and succubi generally have an equal chance of being created (actually, females have a very slight advantage; more incubi than succubi are created when summoning demons).
- In the seduction process, female characters may be forced to wear a ring of adornment if they have one, while males will have it stolen.
- Male and female characters are addressed differently and occasionally receive slightly different messages. This has zero effect on gameplay. [5]

Generally, female characters have a very slight advantage. It is generally more useful to be able to lay eggs than to find random ones that hatch tame, as one can control one's polymorph and choose what monster to create as a pet (within the limits of the ones that lay eggs), whereas random eggs that are found will rarely be useful pets. However, in practice polymorphing and laying eggs is extremely uncommon.

As noted, females also have a slight advantage in generation of foocubi.[‡] However, this is quite minimal.

Therefore, I hypothesized (and believe I have experienced in my interactions with other NetHack players) that many players tend to gravitate towards a gender that they prefer playing for reasons other than practical ones, such as better identification with that gender or role-play.

It should be noted that a character's gender can change during the game when the character experiences an unsuccessful polymorph or puts on an amulet of change.

3 Survey Design

The survey was prepared as a Google Docs form and was posted to four different locations, listed below. The survey consisted of seven questions split over two pages, the first concerning the player in real-life and the second concerning the player's choice of gender in NetHack.

*There are three types of monsters in NetHack: hostile, peaceful, and tame. Hostile monsters try to kill you; peaceful ones mostly wander around and do nothing, leaving you alone unless you don't leave them alone; and tame monsters are your pets and fight on your side. Not all monsters can be tamed, but most can.

[†]Incubi and succubi are demons that appear in a number of places. Being seduced by one can bring a character all manner of beneficial effects, such as increased character level or statistics. However, it can also result in negative effects and can cause death if it occurs at an inopportune time (such as having one's boots of water walking removed while walking over water).

[‡]*Foocubus* is a placeholder for either *incubus* or *succubus* (*foo* is a traditional placeholder in technical circles).

3.1 Data Sources

The survey was posted to the following locations:

- The `#nethack` and `#devnull_nethack` IRC channels on Freenode. *
- Reddit’s `r/nethack` board.
- The Usenet newsgroup[†] `rec.games.roguelike.nethack` (often called *RGRN*).
- The Facebook interest page NetHack.

Each group has a slightly different demographic. Unfortunately, I neglected to ask for the source people were referred from; it would have been interesting to compare. (*Please note: The descriptions of demographics are based on my perception of the community, which I believe to be fairly accurate but is obviously limited. There is no hard data backing this section up.*)

#NetHack

This IRC chat room is probably the most active community gathering. Because it is a chat room, things do not necessarily stay around for too long. I could have placed a survey link in the channel topic, but did not feel my survey was important enough to do so; instead I simply posted a link several times spaced a few hours apart.

This is a good time to run this survey because one of the annual NetHack tournaments is running in the month of November, meaning many otherwise fairly inactive players (like me) will be around. Because of this, I also posted in the tournament channel, `#devnull_nethack`.

The channel has a high concentration of experienced players as well as some new ones.

RGRN

As one would expect from a Usenet newsgroup, RGRN consists primarily of older players, mostly relatively experienced ones.

Reddit and Facebook

I am not a member of either of these communities. However, based on the information I have received and some general exploration, I believe it is relatively safe to say that these groups generally consist of less-experienced and less-serious players. Becoming an active member of the IRC channel (or, to a lesser extent, RGRN) is likely to greatly increase one’s playing skill in a short amount of time, making it unsurprising that it generally has a high number of experienced players.

*IRC stands for *Internet Relay Chat*. IRC was the first implementation of a chatroom. Freenode is one of the IRC networks, a group of servers that provide access to a variety of channels (unique to that network), or “rooms” in the terminology of other similar systems.

[†]Usenet was a popular technology at the time that average people began connecting to the Internet. Today’s Internet forums serve essentially the same function.

3.2 Player Questions

The section was titled “You,” with the explanatory text “This concerns who you are in real life.”*

1. The player’s age, in one of several ranges (0–12, 13–15, 16–18, 19–22, 23–30, 31–40, 41–50, 51–60, and 61+). The question title was *Age*. In retrospect, I should have requested an exact age.
2. The player’s gender (*Male*, *Female*, or *Other / Prefer not to say*). The question title was *Gender*.

3.3 Character Questions

The section was titled “NetHack.”

3. *What gender of NetHack character do you usually play?* Choices: *male*, *female*, *about even*. I received a comment stating that the commenter always selected “random,” and that this choice was not provided, but I decided that random qualified as “about even” since it was the only non-committed choice and will eventually come out about even.
4. *Do you know why? Have any justification?* This was a short answer field and was not required.
5. *If you start a game quickly without giving much thought to your selections, what gender would you probably pick?* The clarification *Example: starting up a quick wizmode game to test something, and your character doesn’t really matter* was provided. I was interested in this question because it might reveal slightly different preferences. I don’t think it turned out to be a very useful question in the end, though. This began with only *male* and *female* as choices, but partway through the survey I had to add *I always click random* since many people do when they don’t care.
6. *Other thoughts?* This was a short answer question and was not required.
7. *Screen Name / IRC Nick*. This was a short blank field, and was clarified as being completely optional and not included in published results. I chose to place this field at the end rather than at the beginning with the demographic information so as not to discourage people from answering honestly due to not being anonymous; this way, people could decide whether or not to give a nick *after* giving their answers.

3.4 Bias

This survey does not have perfect design. First of all, it had to be voluntary-response. This was due to a number of technical issues: *a)* the NetHack community is spread over a large number of different gatherings; *b)* there is no way to get a list of members to sample from;

* *Real life* originally said *RL*; see section 3.5.

and c) many of the people who would be randomly sampled would not be active players and would not care to respond, creating a significant nonresponse bias.

So we must be fairly careful about the results. In particular, there was a significantly higher percentage of female respondents than was cited in the 2009 NetHack survey. [2] However, it is likely that female players would be significantly more likely to return a gender survey, both because they're highly underrepresented and because it's more likely they would be interested in gender studies in the first place.

Additionally, there were simply not enough female respondents (and quite possibly, active female NetHack players in total) to make useful comparisons in some areas.

3.5 Mid-Survey Changes

I tried to keep things as much the same as possible through the period of responses, but I did need to make a couple of changes. Ideally I would run the entire improved survey again. Here's a list of the changes I made:

- Immediately after my first posting, someone requested the choice “other” be added for the respondent's real-life gender. As I personally knew everyone who'd yet responded and none of them would have been influenced by the addition of the choice, I changed it.
- After a couple of responses, someone pointed out that my age ranges overlapped. As the choices were incorrect, I changed them immediately. I suspect that if anybody else had fallen on the boundary, they would have notified me. In any case, there were only 3 responses by that point, so it would not cause a significant change in the data.
- After a number of responses, somebody pointed out that he always selected *random* gender, so the question about starting a game quickly without thinking about the character choices did not apply. I decided to add a choice for this. Since this was a small amount of time into the survey, there may be a number of random selections on that question before I made the change. However, this question turned out to be nigh on meaningless and useless anyway.
- After about 50 responses, someone was confused by my use of the acronym *RL* (standard abbreviation for *real life*, but misinterpreted as *roguelike* due to the situation). I decided to change it to avoid further confusion, even though I was changing the survey in the middle. I believe it is unlikely that the change will influence responses significantly.

4 Results

The survey was open from November 3, 2012 to December 12, 2012, with a majority of responses falling in the first two days but a significant number occurring afterwards. There were 194 responses total. 120 people gave a reason for their choice in the short answer space (one of them using only the “other thoughts” space for it).*

*I did not count the three responses of “nope” as reasons.

4.1 Player Demographics

Age

In retrospect, I should have asked for exact ages to make working with the data easier and allow more accurate numbers.

Age Bracket	Responses	Percentage
0–12	1	1%
13–15	12	6%
16–18	32	16%
19–22	36	18%
23–30	62	32%
31–40	38	19%
41–50	10	5%
51–60	2	1%
61+	1	1%

- The median age is between 23 and 30.
- 41% of respondents were college-age or younger.

The 2009 NetHack poll report used different age groups than I did and likely asked for more precise ages from respondents. The results appear roughly similar given the low precision of my data. (It reported the mean age as 28.12.) [2]

These results may be somewhat skewed by who was interested in taking a survey about gender in NetHack, as this survey was not about demographics.

Gender

Player Gender	Responses	Percentage
Male	166	85%
Female	26	13%
Other / Prefer not to say	2	1%

Female players were somewhat better-represented here than in the 2009 poll, making up 13% of respondents rather than 5%. There were slightly more responses listed under “n/a” on the 2009 poll results than in my survey’s “other” (2.13% as opposed to 1.03%). However, I had a much lower number of total responses in this category (2 as opposed to 9), and additionally it is not clear what “n/a” was listed as on the survey or what answers corresponded to this. [2]

I would like to think that there are more female NetHack players now than there were three years ago, but it is probably more likely that more female players were interested in this particular survey than male players (see section 3.4).

Anonymity

36 people (19%) chose to list a screen name.* I recognized 9 of them (25% of those who listed a name), which suggests to me that there were probably a fairly high proportion of responses from members of the communities I'm not familiar with (stuff outside of #nethack and RGRN). However, as I have no data on whether people in different groups would be more or less comfortable with providing this information[†], this remains a hypothesis. Ideally I would have asked where respondents had been referred from, but I didn't think of that until much too late.

4.2 Overall Character Gender Preference

Most frequent gender played in NetHack came out fairly even:

Character Preference	Responses	Percentage
Male	70	36%
Female	68	35%
About even	56	29%

This seems surprisingly different from the results for real-life gender: it seems a lot of male players prefer playing female characters. According to people's short answer responses, nearly all of the difference is caused by one of two (practical) things:

- Playing Valkyrie. Inexperienced and beginning players are likely to stick with one, easy role, and Valkyries are always female; therefore, these players selected female as most common. 24 people (12% of all respondents, 20% of those who gave a reason) mentioned this in their rationale. I did not include people who did not select female as their usual gender.
- Laying eggs. Despite how rarely this actually has a significant effect on the game, a significant number of respondents (22 people, 11% of all respondents, and 18% of all respondents who gave a reason) mentioned this as a reason why they select female (those who mentioned it but selected "about even" not included). My guess is that, lacking any particular desire for role-playing, these players choose whatever gives the advantage, no matter how slight. Once again, I did not include people who mentioned egg-laying but who typically played male or had no preference.

*I did not count the one respondent who filled the field with only "I'm not active in the community lately."

[†]Also, people from any of the groups may simply have not seen a reason to provide a name.

4.3 Preference By Player Gender

Female Players

Character Preference	Responses	% of Total Female Players
Male	1	4%
Female	18	69%
About even	7	27%

Male Players

Character Preference	Responses	% of Total Male Players
Male	68	41%
Female	49	30%
About even	49	30%

Other / Prefer not to say

Character Preference	Responses	% of Total Other Players
Male	1	50%
Female	1	50%
About even	0	0%

Approximately the same percentage of females were ambivalent about gender selection as males.

In general, male players were significantly more likely to play female than female players were to play male. However, this clearly disregards the practical advantages of playing female; for a more accurate analysis of people's attitudes, we must remove the people who stated that they chose female due to practical reasons.

4.4 Preference By Player Gender – Practical Considerations Removed

49 responses remained after discarding responses unhelpful for this section. I used the following criteria in determining whether or not to discard a response:

- I discarded all responses indicating that the player had no gender preference or picked about evenly.
- If the player mentioned only role-playing reasons, I did not discard the response.
- If the player mentioned practical reasons but also mentioned non-practical reasons (player's gender identity, role playing, etc.), I did not discard the response.
- If the player mentioned only practical reasons, I discarded the response.

- If the player provided no reasons (giving me no way to judge why he/she chose that gender), I discarded the response.*
- If the player gave no reason *but* gave a practical exception in the “other thoughts” box (e.g., “male, except for valkyrie”), I did not discard the response. (In this case, the player is likely to have a non-practical reason for choosing the gender he/she usually does.)
- If the player stated that he or she did not know why, I did not discard the response (I supposed that this probably indicated a general preference or habit, even if not immediately identifiable).
- I was unable to decide whether some of the responses were practical reasons—ones such as “Because I want to use an amulet of change” and “It’s in the config file with the other defaults.” For lack of any better ideas, I discarded these responses.

Gender Distribution of Remaining Players

Gender	Responses	Percentage
Male	40	82%
Female	9	18%
Other / prefer not to say	0	0%

The percentage of female players increased noticeably. This can be explained by the fact that there were no females who mentioned that they played male for practical reasons (and thus no responses were removed due to this), while there were a number of males who played female for practical reasons.

Female Players

Character Preference	Responses	% of Total Female Players
Female	9	100%
Male	0	0%

(There was one response that indicated female-to-male crossplay, but it was discarded for lack of a reason provided.)

Male Players

Character Preference	Responses	% of Total Male Players
Male	32	80%
Female	8	20%

The great majority of players in this survey (84% in total across both genders) appear to prefer their own gender when there are no practical issues informing their choices. Initially

*Several “nope”s remained; these were also discarded.

it appears that male players are more likely than female players to play the opposite gender (“crossplay”). This would seem to make instinctive sense to me: female NetHack players are greatly in the minority and probably need to be a little bit more assertive about their gender identity. Here are a few quotes on reasoning from female players:

- “Just seems cooler to be a lady wailing on monsters.”
- “I’m sort of a roleplayer and identify with it more.”
- “Also, little things like this are surprisingly helpful with regards to gender dysphoria.”

In contrast, a significant proportion of male players said they usually picked female even with practical reasons removed:

- “After all, there’s no real reason why the character’s gender should match your own, so why not defy convention?”
- “I tend to play a female elven wizard loosely based on Ilyana from X-men.” (Definite role-playing.)

However, there were few female respondents whose answers were not discarded, so this result is not particularly certain.

4.5 Prevalence of Role-Playing Mindset

7 players (6% of all players who gave a reason) specifically mentioned role-playing in their response or made a statement that made clear reference to role-playing without using the word.

18 players (15% of all players who gave a reason) made statements that indicated to me that they were mentally invested in their character or role-playing to some degree, such as “Male neutral wizard is my favorite combo” or “I rarely play female characters in games when given the choice—no particular reason.”

Of course, what you count as role-playing or “mentally invested” is extremely subjective, so take these results with a grain of salt. In the notes section I provide a link to the raw data with responses, so you can draw your own conclusions if you so desire.

From this it appears that role-playing is not particularly important to the majority of NetHack players with regard to gender of character. Because gender is such a fundamental part of how people see the world, I would hazard a guess that people who don’t care about the gender of their character probably don’t care too much about role-playing in general.

However, it should be noted that this survey did *not* contain a specific question asking if players considered themselves role-players when playing NetHack, so some respondents who have moderately strong role-playing tendencies may have simply not thought to include it. To be more certain of these results, another survey specifically discussing role-playing should be created.

4.6 Character Gender Preference due to Player Gender Identity

A number of respondents (18% of those who gave a reason) cited their own gender identity as a primary reason for their choice:

- “Because I’m a man.” (male player)
- “I like to play what I am.” (female player)
- “Because I myself am a male and prefer to keep it imaginable.” (male player)
- “No justification. It just feels more natural as I identify strongly with my gender.” (male player)
- “. . . I’m sick of having been a boy most of my life. I’m mtf transgender.” (female player)
- “Playing female character seems creepy to me.” (male player)
- “I don’t feel manly enough to play female characters.” (male player)

This reasoning is somewhat related to role-playing, but in some ways it’s almost the opposite: one generally thinks of role-play as assuming the identity of a different character (who would play a role-playing game in which you went about an average person’s life?).

The prevalence and effect of this reason may be somewhat exaggerated since the survey was voluntary-response and people who are less secure in gender identity, have more unusual feelings, and/or are more interested in the topic are more likely to have returned this survey.

5 Conclusion

The general demographics collected by my poll generally matched what I expected.

I was surprised by the number of people who cited practical reasons for selecting the gender they did (see section 4.2). I initially neglected to consider the impact of the female-only Valkyrie role, primarily because I do not play Valkyrie particularly more than other roles and often do not even notice that I am not being asked to select a gender. I knew that a number of people would cite egg-laying, but I had no idea that 18% of respondents who gave a reason for their choice would consider this a primary reason to select one gender over the other.

Role-playing appears to be less of a priority than I would have imagined. However, as noted, the survey did not specifically ask about role-playing, so it is quite possible that this survey underestimated the number of players who are interested.

Many players seem to select their characters’ genders primarily for practical reasons, but many also consider role-playing and/or their own gender.

The effectiveness and validity of this survey is limited because I got many of my ideas for analysis from seeing the responses I received. Had I had the ideas beforehand, I would have been able to produce a survey that did a better job of asking focused questions and was more likely to be reliable.

5.1 Ideas for Further Research

- This survey received a very good number of responses from females (for the number that appear to be part of the NetHack community), but not enough *reasons* to determine whether females are truly less likely to crossplay for non-practical reasons than males. This can probably be corrected by running a new survey that specifically asks whether respondents select their characters' genders based on practical considerations or not.
- Run a survey specifically about role-playing in NetHack and see what people's attitudes are. If it is to involve gender like this study did, it should compare attitudes of male versus female players.
- Run another poll similar to the 2009 poll to accurately determine if the number of female players really is higher than it was in 2009. While my data certainly don't prove it is, anecdotally it seems to me that there have been more female players hanging out in #nethack lately, so I think it's reasonable to suspect it may be true.

6 Notes

- I am male and identify fairly strongly as such. This is likely to influence the way I see the results.
 - Historically I have tended to prefer female characters myself. I'm not really sure why, but I think it might have something to do with the try-something-I-can't-normally-do-in-real-life aspect of role playing. Nowadays I try to balance genders in my ascensions. (I did not answer this survey.)
- Raw data is available (<http://tinyurl.com/d7fwh63>). It is the same data that I had except for the removal of names since I promised not to publish them. (They've been replaced with *provided name* in case you want to see who chose to be anonymous.)
- One respondent asked in the survey's "Other thoughts" box whether I had given thought to people whose gender and sex was not the same. I do not believe that biological sex is likely to have much influence on people's character selection, except for the fact that transgender people are probably more likely to play their new gender (however, there was not enough data to state this with any reasonable certainty beyond intuition, as only two respondents stated that they were transgender).

7 References

- [1] NetHack. *Wikipedia*.
<http://en.wikipedia.org/wiki/Nethack>
3 November 2012.
- [2] NetHack Poll 2009. *Nethack-de.SourceForge.net*.
http://nethack-de.sourceforge.net/nethack_poll_results.txt
3 November 2012.

- [3] Role-playing game. *Wikipedia*.
http://en.wikipedia.org/wiki/Role-playing_game
3 November 2012.
- [4] Role difficulty. *NetHackWiki*.
http://nethackwiki.com/wiki/Role_difficulty#Roles.27_difficulty_levels
3 November 2012.
- [5] Gender. *NetHackWiki*.
<http://nethackwiki.com/wiki/Gender>
3 November 2012.
- [6] Pastebin output of a script that counts permutations.
<http://danceb.in/MrxVUT0m4hGQrKXU19DNYg>
3 November 2012.
- [7] The script (for accuracy checking). Provided by bcode of #nethack.
<http://danceb.in/AoHLT0m4hGROW719DNYg>
3 November 2012.
- [8] Berlin Interpretation. *RogueBasin*.
http://roguebasin.roguelikedevlopment.org/index.php?title=Berlin_Interpretation
4 November 2012.
- [9] Savescumming – Question 4.1. *rec.games.roguelike.nethack FAQ*.
<http://www.spod-central.org/~psmith/nh/rgrn-FAQ.txt>
4 November 2012.
- [10] ASCII. *Wikipedia*.
<http://en.wikipedia.org/wiki/ASCII>
4 November 2012.