HOWTO Encourage Women in Linux

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Table of Contents

Table of Contents

1. Introduction

At the 2002 Ottawa Linux Symposium, I hosted a LinuxChix Birds Of a Feather session. During the BOF and throughout the conference, I heard the same set of questions:

"My girlfriend hates Windows, how can I encourage her to use Linux?"

"Almost no women attend my local LUG. How can I fix this?"

"Why aren't there more women in open source?"

Clearly, people in the Linux community would like for more women to be involved in Linux, but most people don't know why so few women are involved or how to change that. This HOWTO is an effort to summarize the explanations, recommendations, and opinions of the women who already are interested and active in Linux. This document began with the verbatim recommendations of the women who attended the LinuxChix BOF, and was added to by many more women in the months following the original BOF. In other words, this HOWTO represents the feelings and opinions of real women involved in Linux. While we represent the women who "made it," we still have fairly important insights into why other women left or never entered the Linux community, as well as being keenly aware of the pressures which are currently pushing us out of the community.

In this HOWTO, we'll talk about why women stay out of computing in general, why they stay away from Linux in particular, and what you can do to help encourage women in Linux. We hope that this HOWTO will result in more women using, installing, and developing Linux.

1.1. Audience

This document is intended mainly for the male Linux enthusiast who would like to see more women involved in Linux. Its secondary audience is both men and women who have been too busy having fun with Linux and computers to sit down and think about why most women don't share their interests. We hope you'll come away from this HOWTO with some understanding of why women stay away from Linux and with a few ideas about what you can do to reverse that trend.

This HOWTO is not directed towards people who aren't concerned about the lack of women in Linux, or think that women are better off staying away from Linux. If you don't already believe that women are being driven away from Linux and computers by external causes, this HOWTO probably won't convince you otherwise (although it may give you some interesting avenues of research to follow up on).

This HOWTO is definitely not intended to help male Linux geeks find female Linux geeks to date. The central paradox of women and Linux is this: often, the people most anxious for more women in Linux are also the people most likely to accidentally drive them away. Frequently, men who want more women in Linux solely so they have a better chance of finding a girlfriend end up acting in ways that end up driving women away instead! This HOWTO will try to explain which behaviors drive women away from Linux and which behaviors encourage them.

1.2. What problem? Sexism is dead!

A sentiment I hear frequently: "What problem? There's no problem! Sexism is dead! Women are staying out of Linux because they want to!" If you feel this way, you may change your opinion by the time you finish reading this HOWTO. I also used to believe that sexism was dead. Shortly after joining several women in computing mailing lists, I realized how wrong I was. Week after week, women have new stories about how they were discriminated against and insulted because they were women. These stories aren't decades old, nor do they involve people who grew up when sexism was more acceptable. These are day−to−day experiences of today's women, in modern settings, who are being driven out of their chosen profession by sexism. This isn't theoretical−−many women actually leave the field of computers entirely because of blatantly sexist incidents involving superiors at work or at school.

Read the links below for my favorite example of modern−day sexism:

Initial post to the Sydney LUG mailing list, by a woman:

http://lists.slug.org.au/archives/slug−chat/2001/October/msg00286.html

Follow−up posts diagnosing the problem as "over−stressed female":

http://lists.slug.org.au/archives/slug−chat/2001/October/msg00290.html

http://lists.slug.org.au/archives/slug−chat/2001/October/msg00312.html

Gee, surprise, these two responses are enough to drive her away:

http://lists.slug.org.au/archives/slug−chat/2001/October/msg00313.html

Hysterically funny and heroic response from another woman:

http://lists.slug.org.au/archives/slug−chat/2001/October/msg00317.html

Despite the pointed sarcasm, obnoxious man still doesn't get it:

http://lists.slug.org.au/archives/slug−chat/2001/October/msg00319.html

A perfect response from a man who does get it:

http://lists.slug.org.au/archives/slug−chat/2001/October/msg00321.html

Sexism is alive and well, and it is driving women out of Linux. You can argue that the Linux users joking about "over−stressed females" in the above posts are ignorant, or stupid, or well−meaning, or should in some way not be labeled sexist, but the result of their actions is that women are leaving Linux, something we would like to prevent.

1.3. About the author

Val Henson is a Linux kernel developer, an active member of LinuxChix, and female. Her interests include operating systems research, women and computer science, and fine beer. Many other women collaborated with her to produce this HOWTO, including:

- Raven Alder
- Suzi Anvin
- Poppy Casper
- Claudia "Texchanchan" Crowley
- Steph Donovan
- Joy Goodreau
- Telsa Gwynne
- Amy Hieter
- Hanna Linder
- Anna McDonald
- Marcia Barret Nice
- Miriam Rainsford
- Carla Schroder
- Jenn Vesperman
- Jenny Wu
- Megan "Piglet" Zurawicz
- Safari
- And many others who wish to remain anonymous.

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2. Why are there so few women in Linux?

Women stay out of Linux for many of the same reasons they stay out of computing in general, plus a few reasons specific to Linux. Many excellent books and research papers have investigated this topic in depth, but we can only summarize the top reasons why women avoid computing as a whole. We'll also debunk some common theories about why women stay out of computing in general.

Three good overall resources for the topic of women in computing are:

"Unlocking the Clubhouse: Women in Computing" by Jane Margolis and Allan Fisher

http://www.amazon.com/exec/obidos/ASIN/0262133989

Women in Computing Keyword List

http://women.acm.org/search/key_list.php

(Some of the papers referred to by this list are available online, but not all.)

"Why Are There So Few Female Computer Scientists" by Dr. Ellen Spertus

http://www.ai.mit.edu/people/ellens/Gender/pap/pap.html

Let's start by examining two of the most common explanations for why there are so few women in computing: "Women just aren't interested in computers," and "Women aren't as smart as men." The problem with the statement, "Women just aren't interested in computers," is that it doesn't actually say anything. It's equivalent to answering the question, "Why is the sky blue?" with "The sky just is blue." The implicit argument here is that women are genetically predetermined from conception to not be interested in computers. Very few people are willing to say exactly that in so many words, but that is the message behind the "just aren't" theory. If you are unwilling to accept that women's lack of interest in computing is genetically predetermined (and I hope you aren't willing to accept it), you need to start exploring what environmental causes are involved.

A more explicit version of this theory is that "Women aren't as smart as men," or any of the usual corollaries−−women aren't as good at some skill as men are, usually mathematics, spatial reasoning, or logic. *Newsweek* regularly trumpets studies finding gender−related mental differences while ignoring the (far more common) studies which find no difference at all. Frequently, other researchers are unable to duplicate the results or find flaws in the original researchers' methods, but those stories tend to get much less press. These studies also make no attempt to control for differences in the upbringing of men and women. For example, studies frequently show that women have better developed linguistic capability in some way. This is taken as proof, at least by the press, that women are genetically predisposed to be more verbal than men. But at the same time, studies also show that young women are rewarded more than young men for verbalization. The sheer existence of physical differences between male and female brains (an idea still in dispute) is not in and of itself proof that men and women are born with differences in mental capacity. We still need to separate out what differences are caused by genetics, and which are caused by the environment. As a result, if you ask the experts, the only consensus on gender−related mental differences is that there is no consensus. This is an area of ongoing research, where results will continue to be hotly debated for decades or centuries. (My personal opinion is that men and women do have some innate, genetically based differences which result in tendencies towards different behaviors, but I won't guess what they are or how strongly they influence behavior. Human beings are extremely adaptable creatures, so I suspect the genetic differences are minor compared to differences in environment.)

Something else to keep in mind is that similar arguments have been made about many other fields when women first began joining them, from medical science to education. For example, women couldn't be doctors because they weren't physically strong enough to set broken bones, would faint at the sight of blood, or didn't have the proper bedside manner. Those arguments were abandoned when women turned out to be just as good doctors and teachers as men were. Maybe men will turn out to be better at computer science than women, but history does not support that hypothesis.

A good reference for the general topic of measuring differences between human groups and the motivation behind those measurements is *The Mismeasure of Man* by Steven Jay Gould. Scientists have been "proving" differences in the brains and bodies of groups of humans for centuries, although in hindsight both their methods and their results were flawed. For example, Stephen Jay Gould reviews the methods of one scientist measuring skull capacity in men and women of different races (and by implication, brain size and intelligence). The scientist originally measured the volume of the skulls by packing them with linseed, which is somewhat compressible, and confirmed his hypothesis that white men tended to have larger skulls. When he later remeasured the volume of the skulls with incompressible lead shot, he discovered that much of the differences in volume between the skulls disappeared. He had been subconsciously stuffing the skulls belonging to white males with more linseed than the skulls belonging to women or non−white men. Keep this story in mind when you read studies claiming to find that some brain structure is a different size in men and women.

Now that we've addressed some common misconceptions about women and computing, let's look at the real reasons why women stay out of Linux and computing. I personally believe that the tendencies and behaviors I'm about to describe are the result of the way most women are raised, in other words, they are the result of gender socialization. I'm not claiming that women are born less confident, or anything else, I'm just observing general tendencies in women and pointing out how Linux culture discourages people with those tendencies. Many of the reasons I'm about to list also apply to other underrepresented groups in computing or science.

2.1. Women are less confident

Women severely underestimate their abilities in many areas, but especially with respect to computers. One study about this topic is *Undergraduate Women in Computer Science: Experience, Motivation, and Culture*: http://www−2.cs.cmu.edu/~gendergap/papers/sigcse97/sigcse97.html

For example, while 53% of the male computer science freshman rated themselves as highly prepared for their CS courses, 0% of the female CS freshman rated themselves similarly. But at the end of the year, 6 out the 7 female students interviewed had either an A or B average. Objective ratings (such as grade point averages or quality and speed of programming) don't agree with most women's self−estimation. I personally encountered this phenomenon: Despite plenty of objective evidence to the contrary, including grades, time spent on assignments, and high placement in a programming contest, I still didn't consider myself to be at the top of my class in college. Looking back objectively, it seems clear to me that I was performing as well or better than many of the far more confident men in my class.

2.2. Women have fewer opportunities for friendship or mentoring

Like any other discipline, computer science is easier to learn when you have friends and mentors to ask questions of and form a community with. However, for various reasons, men usually tend to mentor and become friends with other men. When the gender imbalance is as large as it is in computer science, women find themselves with few or no other women to share their interests with. While women have male friends and mentors, it's often harder and more difficult for women to find a community and then to fit in with it. Many women leave the field who would have stayed if they had been male.

It's true that this is a feedback loop, fewer women in computing leads to fewer women in computing. It's important to understand that this feedback loop causes women to leave computing who wouldn't have left if, all other things being equal, they had been men. This is important because male classmates often assume their female counterparts leave the field because they "just aren't good enough." Women's low self−estimation contributes to this false impression.

2.3. Women are discouraged from an early age

Societal pressure for women to avoid computing begins at an extremely early age. Preschoolers already have conceptions about which jobs are men's jobs, and which jobs are women's. An excellent review of studies documenting gender role socialization from an early age can be found in Dr. Ellen Spertus's excellent "Why are There so Few Female Computer Scientists?" paper:
http://www.ai.mit.edu/people/ellens/Gender/pap/node6.html

Once you realize that men and women are treated differently from, practically, birth, it becomes hard to claim that any woman hasn't experienced discrimination. Sure, if you're lucky, no one ever explicitly told you that you couldn't work with computers because you were a girl, but every time you raised your voice, an adult told you to quiet down, while the boy next to you continued to shriek. This is a handicap later on in life, when being loud and insistent is the only way to get your opinion heard−−for example, on the linux−kernel mailing list.

The most striking example of a subtle bias against computing for women is that, in the U.S. at least, the family computer is more likely to be kept in a boy's room than in a girl's room. Margolis and Fisher give several telling examples of this trend and its effects on pages 22−24 of *Unlocking the Clubhouse*.

2.4. Computing perceived as non−social

Working with computers is perceived to be a solitary occupation involving little or no day−to−day human contact. Since women are socialized to be more friendly, helpful, and generally more interested in human interaction than men, computing tends to be less attractive to women. I want to stress that computing is only perceived to be a non−social activity. While it is possible for a programmer to be relatively successful while being actively anti−social and programming does tend to attract people less comfortable with human interaction, computing is as social as you make it. During college, I spent most of my computer time in a computer lab at the school with several of my best friends. And recently, I changed jobs specifically in order to have more day−to−day contact with other programmers. For me, programming by myself is less fun or creative than it is when I have people around to talk to about my program.

Oddly, many occupations which are arguably less social than computing are still very attractive to women. Writing, either fiction or non−fiction, is a good example of a field that requires many hours of solitary concentration to be successful. Perhaps the answer to the paradox lies in the perception of individual writers as still being interested in social interaction, and just not having much opportunity for it.

2.5. Lack of female role models

Women in computing do exist, but most people aren't lucky enough to meet a female computer scientist. Women are socialized to be modest and avoid self−promotion, which makes them even less visible than they might otherwise be. Mothers and female schoolteachers regularly protest that they don't know anything about computers. As a result, girls grow up without examples of women who are either competent or confident with computers. I encourage all women in computing to be as visible as possible−−accept all interviews, take credit publicly−−even when you don't want to. You may be embarrassed, but by allowing yourself to be publicized or promoted, you might change a young girl's life.

2.6. Games, classes aimed towards men

We all know that most computer games are written by and for men. They feature non−stop gore and women with unrealistically huge breasts, but hey, if that's the market, what's the problem?

The best way I know how to illustrate the problem with the computer game industry is to tell a story from a Salon.com article (http://archive.salon.com/tech/feature/2001/05/22/e3_2001/) about the 2001 E3 gaming convention:

"A creative director for a leading development team cheerfully described to me how its Q.A. team made a prostitute sport a game's logo on her body during a combination gonzo video/gangbang session."

This was only one of many similar stories and events at the conference. How can an industry that views company−sponsored gangbangs as somehow appropriate *not* be driving women out of the computing arena in droves?

2.7. Advertising, media say computers are for men

The next time you see a computer ad featuring a person, pay attention to that person's gender. Most likely, the person is a man. Frequently, when I do see women in a computer ad, they're wearing freakish makeup and some form of colorful skintight vinyl, or else they're acting dumb and helpless and waiting for the man to show them how to use the computer. Often, they don't appear to actually be using the computer and are just sort of decoratively posed near it. Movies and TV shows are no better. When a woman is depicted as a programmer, often more screen time is spent admiring her shapely body and kissable lips than demonstrating her competence as a programmer. Notable example: Angelina Jolie in "Hackers."

Men and women are constantly bombarded with media images which say: "Men use computers, women don't." It's difficult to overcome daily indoctrination of this sort.

2.8. Life−work balance more important to women

Being good at computing is considered to be an activity that requires spending nearly all your waking hours either using a computer or learning about them. While this is another misperception, women generally are less willing to obsess on one topic, preferring to lead a more balanced life. Women often believe that if they enter computing, they will inexorably lose that balance, and avoid the field altogether instead. During college, I was personally very proud of not spending my leisure time playing computer games because it refuted the programmer stereotype of being at the computer all day, every day.

2.9. Reasons women avoid Linux specifically

Linux development is more competitive and fierce than most areas of programming. Often, the only reward (or the major reward) for writing code is status and the approval of your peers. Far more often, the "reward" is a scathing flame, or worse yet, no response at all. Since women are socialized to not be competitive and avoid conflict, and since they have low self−confidence to begin with, Linux and open source in general are even more difficult than most areas of computing for women to get and stay involved in.

3. Do's and don't's of encouraging women in Linux

Encouraging women in Linux involves both learning what to do, and learning what to stop doing. We'll present our ideas in "do" and "don't" pairs, since having only a list of things to do or a list of things not to do is not as helpful as having both. Some of these suggestions may seem insultingly obvious to you personally, but for many other people, they aren't obvious. Each of these suggestions is based on multiple real−life encounters with people for whom these ideas weren't obvious. Try not to dismiss any of the ideas−−these are real suggestions from real women, the women you presumably want to attract to Linux. Also, most of these suggestions are not gender−specific, and will help to attract all types of people to Linux.

3.1. Don't tell sexist jokes

Sexist jokes are the number one way to drive women out of any group, and they are more common than many people realize. I have more than once heard a man say that he doesn't make that kind of joke, and then hours or minutes later, hear the same person make a joke about pregnant women or PMS. Sometime he just doesn't realize that he made a sexist joke, for example, "blonde jokes" are actually "dumb women" jokes. Sometimes he tells me that it's okay to make a sexist joke if it's true, or it's funny (funny to whom?). What some people fail to realize is that jokes about gender of any sort almost always make fun of women, and will make most women angry, regardless of the context. It doesn't help to first make a sexist joke about men and then one about women.

You can argue that women shouldn't be so sensitive (and I will disagree with you) but even then, regardless of should or should not, your comments and jokes are driving women away. If that's not what you want, then don't make sexist jokes. If you're not sure if your joke is sexist, find something else to say.

3.2. Do protest sexist jokes

The next time you see someone joking about women on your local mailing list or in person, complain about it. It's difficult to do this without making yourself a target for ridicule, but it's even more difficult for a woman to do the same thing. Women keep silent when we see sexist jokes because if we protest, we will immediately be attacked for being over−sensitive, uptight, or a "feminazi." (Note: NEVER use the term "feminazi." It discredits all feminists, and trivializes the victims of the Nazi Holocaust. Consider how ridiculous it sounds to call people like Rush Limbaugh "male chauvinazis" and you may understand why "feminazi" is so emotionally loaded.)

The best way to fight back against sexist jokes is with humor. If someone replies to a post about the technical achievements of a woman with "Is she single?" reply with, "Gee, Jeff, no wonder YOU'RE still single." Every time a woman sees a sexist joke or comment, she feels angry, left out, and belittled. Every time a woman sees a man stand up against this behavior, she feels included and valued.

3.3. Don't call people bitches

Using the word "bitch" (and several other words) is derogatory to women, no matter whom the word is referring to. I wouldn't have bothered to include this except that it's apparently not as obvious as I thought, as I have recently heard Linux developers use "bitch" in a serious manner with apparent nonchalance.

3.4. Do show some respect

Talk respectfully about all women, not just the women you're attracted to, as well as all other kinds of humans of all ages and appearances. If you don't do this, women will tend to assume that you will treat them as badly as the people you're insulting and avoid you.

3.5. Don't take the keyboard away

This is a general problem when teaching anyone something new, but it happens more often to women. Someone asks a question, and instead of telling that person the answer, you take away the keyboard and type in the command yourself. Don't do this! It makes it much more difficult to learn and it makes the other person feel stupid and helpless. In general, give people a chance to learn how to do things themselves if they're interested in learning. You may think you're doing a friend a favor by fixing her Apache configuration while she's gone, but if she's trying to learn how to configure Apache, then you're not actually helping her.

3.6. Do give directions and explain them clearly

While it is much harder for you to take the time and patience to explain what to do and why, and then spell out the command to type, it's worth it in the long run because the other person is learning and you're less likely to ever have to answer that question again. Specifically, women will feel more confident in their own abilities if you allow them to type the command themselves.

3.7. Don't make sexual advances towards women

Imagine a bar or a pub full of sports fans, fans of a game which you don't know much about or like. Imagine that they're all taller and stronger than you, speak in a language you only halfway understand, and belittle anyone who isn't totally focused on their sport. Now imagine that you walk into this bar, wearing a shirt that says, "I AM NOT A FAN OF ANY SPORT." Just imagine it for a minute. How would you feel? Nervous? Afraid? Different? Out of place?

You begin to have a teeny−tiny idea of what it's like to be the only woman in a large group of men.

Keep that feeling of nervousness in mind when you read the rest of this paragraph. When you immediately make a sexual advance to a woman at a LUG or online, you're making her feel like she's not part of the community, like she's under attack, and like she is risking being ostracized if she turns you down or offends you. Remember, this isn't a friendly one−on−one situation where she feels comfortable turning you down, she's surrounded by the equivalent of the aforementioned huge sports fans. She's trying to fit in and be part of the group, and by hitting on her, you're cutting her out of the herd and isolating her from the group. Women grow up with the constant fear and awareness of being attacked by men, and as silly as it may seem, it colors all her interactions, no matter how safe or mundane they may seem to men.

Like any other human being, a woman wants to have friends and be appreciated for who she is. Every time she gets an email asking her on a date, she is reminded that she isn't viewed as part of the group, but instead as different, an object of desire, and is certainly not being judged on her technical merit alone.

This may be hard to stomach, but you need to not hit on women who show up for Linux events, at least not right away. In all likelihood, you are NOT throwing away your only chance at true love by not coming on to her immediately, but you are throwing away your chance to have a fun new member of the Linux community.

And even if you still think you're missing a chance at true love, keep in mind that many women brave enough to show up at a LUG or your local mailing list will frequently make the first move anyway. By hitting on them at the first opportunity, you're scaring them away, and you're also scaring away all the other women who might have become interested if the first woman had stayed.

This goes double for women you meet over email or on IRC. You may think that your "Are you single?" line is hysterically witty and suave, but she's heard it a million times. Even if you're joking, even if you already have a girlfriend or are married−−don't do it.

3.8. Do act friendly

When women aren't being hit on, we're often being completely ignored, instead. This isn't any better. Women new to a group often want the same things men want − we want to feel welcomed, we want to talk about subjects of mutual interest, we want to make friends. When a woman says something, listen and respond in a friendly manner. Start a conversation and find a topic you're both interested in talking about. Don't assume that because she's a woman, she has stereotypically female interests or opinions, instead, keep an open mind and listen for clues about what she is interested in. Most likely, she has interests beyond hair, makeup, and movie stars if she's involved in Linux.

Several women have complained that all men seem to be able to talk about with them is why women stay away from computers. While it's an important issue, women would like to talk about something else most of the time, and we would especially not like to be reminded of how "weird" we are when we first join a group. Wait until she's settled in and feels comfortable before bringing up the subject if you're curious about it.

3.9. Don't complain about the lack of women in computing

It's useful and constructive to talk about the lack of women in computing when you are approaching it from the viewpoint of the women who are being left out of an exciting and rewarding field. It's sad and pathetic to talk about the lack of women in computing from the viewpoint of a man who blames his lackluster love life on the lack of women in computing. The best way to annoy and drive away women is to talk about the lack of women in computers in this way. Here are some of the more common reactions of a woman listening to a man whine about the lack of women in his field:

- "What am I, invisible? Does he know I'm here?"
- "Good to hear that I exist only to serve lonely men."
- "Pathetic. You're so pathetic."
- "Then why don't you do something about it instead of complaining?"
- "Once again, everyone assumes that only men are listening."
- "Maybe I shouldn't be in this field."
- "What's wrong with me that I'm here and other women aren't?"
- "He's so self−centered."
- "No wonder he doesn't have a girlfriend."
- "Not only am I in a meat market, I'm the chopped liver."

As you can see, not only does whining about the lack of women make you annoying to women, it also makes the women who are here more likely to leave. In no case does it result in a woman being more likely to date you.

3.10. Do encourage women in computing

Instead of complaining about the lack of women, start doing something about it. Take women's complaints seriously (starting with this HOWTO), read the studies on why women avoid computers, math, and science in general, and find ways that you can help encourage women. Be encouraging and supportive when other people discuss the reasons why women are being driven out of computing. If you have the opportunity, try to mentor women. Mentoring means guiding, encouraging, and counseling someone in their education and career. Not everyone is capable of mentoring, and it's difficult to find compatible mentors and mentees, but when it does work out, the results can be spectacular. Don't, however, think of mentoring as a way to find a girlfriend – all a mentor gets out of the relationship is reflected glory from your student and the joy of watching another person grow.

3.11. Don't stare and point when women arrive

Nobody likes being stared or pointed at. Why would a woman like it either? Many women complain that when they walk into a room of Linux enthusiasts, suddenly, the conversation stops, everyone turns around and looks, and few people even point to make sure their buddies can see what everyone is staring at. This is intimidating and unpleasant, and more than enough to make a woman swear never to return.

A good quote from Mia, a women in Linux:

> "I've never bothered going to a LUG but I've been to other geek events where everyone has turned around and stared when I walked in... it felt more like the 'stranger walks into a bar scene' in a western than anything else."

3.12. Do treat new arrivals politely

When a woman walks into a LUG meeting or posts on a mailing list, act nonchalant. Try as much as possible to treat her like any other person you would like to have as part of your group. Remember, it's not flattering to remind her that she's one of a kind, special, rare, or weird. Start pretending that women are a normal part of the Linux community and you'll go a long way towards making that a reality.

3.13. Don't treat women stereotypically

Don't assume that all women like cooking, sewing, and babies, and are at the LUG or on the mailing list only because their boyfriend, son, or husband are interested in Linux. One woman says that every time someone in her LUG explained something to her, they would use an analogy to cooking or babies, assuming that those were the subjects she was most familiar with. Don't assume we aren't interested in cars, math, fighter jets, or robotics. Don't assume that we don't know how to compile a kernel−−I personally know at least fifteen women who can compile their own kernels and several of those also write kernel code. If you're lucky, one of them will show up to your LUG or mailing list, and you wouldn't want to insult her by assuming she couldn't even install her own machine. Don't assume that she got interested in computers because she liked to chat or send instant messages. Women are about as likely to cuss as men−−don't do a double−take if you cuss in front of a woman. If she's read any of the kernel code (notably arch/sparc/), she's heard of the word "fuck" before.

3.14. Do treat women as normal people

As much as you can, act like the women in your group are just normal people, because we are just normal people. Some people complain, "Women want to be treated just like normal people, but then they tell me not to make sexist jokes around them! That's a paradox!" Well, if you define "normal people" as "the men I usually hang out with," then it is a paradox. If you include women in your definition of "normal people," and then treat normal people in a fair and respectful way, then women don't require any special treatment.

If you're still unsure of how to treat women, try the following: Be friendly but not overbearing, be casual, start conversations the way you normally do, move on when the conversation is over. If you spend most of your time around a very specific subset of the male population, you will have to change your behavior to some degree, but this is just as true as if you were talking to a man from a totally different background. If you find that you have to heavily modify your behavior in order to not offend women, you should consider changing your behavior in all circumstances. No one is fooled if you simply stop making sexist jokes when women are around but continue to make them when (you think) women aren't around.

3.15. Don't criticize too much

Women are socialized to be far more sensitive to criticism than men, as well as more critical of themselves. As a result, women are far more likely to be driven off by heavy or unfair criticism than men. When you're tempted to criticize, try to remember that absolutely no one was born knowing how to compile a kernel and that at one point, you didn't know anything about Linux, either. People will lose interest in something if they perceive themselves as being bad at it, so if you want someone to continue being interested in Linux, don't criticize her so much that she believes she isn't any good at it.

3.16. Do compliment

Women have much lower self−confidence than men on average, and will generally judge themselves far more harshly than any outsider. Compliments help improve her self−confidence, which in turn keeps her interested in the subject. If she believes that she's not good at Linux, she'll probably stop working on Linux.

The following are some guidelines for complimenting anyone:

- Be sincere and truthful. If you really think her program is an ugly piece of garbage, don't tell her that you admire its syntactic beauty. Find something you can honestly admire and compliment that.
- Be specific. "You're good at Linux," is meaningless, "You always know which distribution to recommend," is specific and therefore meaningful.
- Be appropriate. Don't compliment a kernel developer on installing Linux. Don't compliment a gimp developer on her use of layers. Be sure that your compliment actually reflects a significant accomplishment rather than demonstrating your ignorance of her level of expertise.
- Compare to yourself. If she learned bash scripting more quickly than you did, tell her so. Say, "Wow, you learned bash scripting after X months. It took me 2*X months to learn that." Or if she made a silly compilation mistake, tell her about your worst compilation mistake. When she learns that her mistakes are not unusual, she'll feel better.
- Compliment before you criticize. If you do have a constructive piece of criticism, it's a good idea to start out by telling her what she did right.
- Compliment and don't criticize. Don't always follow a compliment with a criticism. More often, compliment her and be done with it.

- Don't brag. Saying, out of the blue, "She can compile her own kernel!" and beaming fondly upon her is not complimentary, it's bragging about her abilities as if you are responsible in some way for her success. Parents are especially prone to bragging. Pointing out her expertise in an unobtrusive and subtle manner is much better − "Oh, well, if you have a question about kernel compilation, she might be able to help you better than I can." When someone points out my capabilities in this manner, it's indescribably wonderful.

You almost certainly shouldn't compliment her on her hair, her face, her body, or her sweet temperament. If she's interested in Linux, she is, by definition, a geek, and probably wants to be complimented on her intelligence, abilities, and hard work. Compliment her on installing Linux for the first time, on her customized desktop, on her intelligent and interesting questions during the last meeting. A compliment on anything else is inappropriate and will be seen as a sexual advance (because it almost always is), and will make her feel more uncomfortable and less confident.

3.17. Don't invite only male speakers

If all your speakers are always men, women will notice and not feel welcome. Role models people can identify with are important to staying interested in a field.

3.18. Do ask women to speak

It's surprisingly easy to find technically brilliant female computer scientists willing to come speak to your group. If you explain that you are trying to encourage women in computers, many women will be even more likely to speak at your event. Women speakers are probably the number one way to get women to come to your event. They will be able to see a role model, ask her questions about her experiences, and for a few hours at least, not feel like the only woman who's interested in computers. Be sure that when you do invite a woman speaker that you advertise the event well, especially to women.

One woman says that she noticed her LUG paid less attention to and was ruder to women speakers. She thought it might be because the members dismissed the possibility of her knowing anything they didn't already know. Be sure not to let this happen to your women speakers.

3.19. Don't micro−specialize

Maybe you and your friends are perfectly happy to show up to your local LUG and talk about the same topics (the latest video card, first−person shooters, robots) every week, but for whatever reason, few women have the endless interest in minutiae that men often display. Try not to have all your speakers talk about micro−specialties, or always discuss the same areas of robotics.

3.20. Do discuss broader topics

Arrange for speakers on a wider range of issues than just technical specialties. Women tend to be more interested in political and social issues surrounding computing, and women also tend to have a broader range of technical interests within computer science. Try scheduling a discussion on compilers if you always end up talking about USB, or a review of the open source licenses instead of endlessly rehashing the discussion about binary−only Nvidia modules.

3.21. Don't make your meetings hard to attend

About the worst LUG meeting possible: 10pm on Monday night, in a warehouse in downtown, the unmarked entrance is in a deserted and poorly lit alleyway, and no public transport is nearby. Oh, and we're serving pizza (choices: meat, double meat, and extra spicy meat) and cheap beer. Did I mention we're going out to a sports bar afterward?

3.22. Do make meetings easy to attend

As usual, following these suggestions will make your meetings more attractive to everyone. Try to schedule your meetings at family and school friendly times – not too late in the evening. Make sure your meeting is in a safe, well lit place with easy access to public transportation, if your city has any. If you want new people to attend, the meeting place should be clearly marked and easy to find. If you serve food or drink, try to vary the menu a bit. After an informal survey, we discovered that women tend to prefer sandwiches, fruit, and vegetables instead of pizza. Chinese takeout is one way to easily provide a variety of different food. Consider having a vegetarian menu option. If members of the LUG socialize outside meetings, try to do things which are welcoming to people of different backgrounds.

3.23. Don't make new people feel unwelcome

If a new person shows up and all the established people refuse to talk to or acknowledge the new person, the new person is unlikely to come back. Most likely, everyone is just too shy to say hello, but that doesn't make any difference. Additionally, if other members immediately attack or challenge or just ignore everything the newcomer has to say, she won't be interested in returning.

3.24. Do help new people get involved

Ask new people to introduce themselves and talk about their own projects and interests for a bit. Try more informal meeting styles – instead of a speaker and a silent audience, have a panel question and answer session or a round table discussion. Let members speak for a few minutes on their own projects, so new people who share their interests know who to talk to. If you have someone who doesn't mind speaking to strange people, ask them to serve as host and welcome new people to the group or mailing list.

3.25. Don't underestimate girlfriends or wives

Many women involved in Linux or computing are also dating or married to men with similar interests. Many people then assume that the woman is only interested in Linux because her boyfriend or husband is. Women are sometimes introduced to Linux through a boyfriend (which shouldn't make their interest less valid or less important). More often, women become interested in Linux or computing, start making friends and meeting people in the field, and because there are so few women in the field, we unsurprisingly often have little difficulty finding a person to date in the same field. Don't conclude that because most women in Linux are dating or married to someone also involved in Linux, that women are only interested in Linux because of that relationship. For many women, interest in Linux predates her current relationship. I personally became interested in Linux while I was dating an English major who wouldn't know an operating system if it walked up and bit him.

One of the LinuxChix reports that her first invitation to speak at a conference was as a member of a panel entitled "Wives of Hackers." The prominent open source celebrity who suggested the panel didn't understand why she was insulted. After all, her own work in open source was apparently insignificant compared to being the wife of a famous kernel hacker.

3.26. Do treat girlfriends and wives as independent people

Girlfriends or wives of people interested in Linux also have their own lives and accomplishments, and frequently those are also in the area of Linux or open source or computing. Instead of treating her as an adjunct to her boyfriend or husband, recognize that she has her own interests and areas of expertise, and talk to her about them.

4. But I don't do that!

This is perhaps a good time for some introspection. At the LinuxChix BOF at Ottawa Linux Symposium, we finished listing all the reasons why women stayed away from LUGs. A man from the local LUG raised his hand and said that no one at his LUG did any of the things we complained about, but they were still having difficulty attracting women. A woman from the same LUG raised her hand and said, "Yes, they do." She went on to say that only a few "bad apples" were doing these things, but those few were enough to drive off most women. This is a very important point: if your group has nine helpful and polite members, and one rude, sexist, loud member, most women are going to continue to stay away because of that one member. I realize that this isn't fair to the other people in the group, but that's reality. If your group is stuck with one bad apple, try a little peer pressure the next time he does something that will drive off women. Reply to his email, disagree with what he says−−establish that you don't share his opinions. Just knowing that there is one other person in the group who is willing to publicly disagree with the "bad apple" will help immensely, and will make women more willing to stay.

In my own experience, I have over and over again heard a man say that he doesn't do any of these things, and then observed him hours or minutes later doing exactly what he claimed he doesn't do. I don't think any of those men were lying, just completely unaware. Making sexist jokes or comments seems to be the most unconscious behavior − many men just don't realize that what they're saying is offensive to women.

Also, it's definitely possible to have good intentions and still drive away women. You may think you're encouraging a woman by congratulating her on being brave enough to show up to an event, but you're actually pointing out to her that she's weird and unusual, rather than making her feel like part of the community. As one woman put it, "I know I'm an alien. You don't need to emphasize it." We're hoping that this HOWTO will help you realize when you are unintentionally driving away women.

If you're curious about how your behavior appears to women, my best suggestion is to find a woman you know who tends to be blunt and outspoken, and ask her if she remembers you saying or doing something offensive to women. You might be surprised at her response. Remember, most women would rather chew off a leg than be rude to a man to his face, so it may be difficult to get an honest answer.

A. LinuxChix

LinuxChix is an active and growing organization run by and for women who are interested in Linux. Founded by Deb Richardson and currently run by Jenn Vesperman, LinuxChix specializes in providing a supportive and friendly environment for all Linux users and developers, but especially for women. LinuxChix is run by an international group of volunteers who believe in the importance of including women in the Linux community. Men may join LinuxChix, but the focus is on women and we attempt to maintain a female−dominated environment. The women involved in LinuxChix include several Linux kernel developers, a Mozilla developer, a member of the GNOME foundation, an O'Reilly author, system administrators, computer consultants, security experts, students from high school to Ph.D. level in many fields, literally hundreds of programmers of various sorts, and many computer hobbyists. If you are a woman interested in Linux, or you know a woman who is, LinuxChix is an excellent place to find a peer group.

LinuxChix has recently added a number of features, web resources, and mailing lists. If you visited it more than a few months ago, you may want to take a second look. New features include Linux kernel hacking lessons, several new mailing lists, online programming courses, book and software reviews, and much much more. Many LinuxChix chapters have started or restarted recently (chapters exist to bring LinuxChix together for face−to−face meetings). The LinuxChix "development process" is open and friendly. We welcome new volunteers and ideas, just subscribe to the mailing lists and offer to help.

You can find out more about LinuxChix at our website:

http://www.linuxchix.org