

# Ma10: The (Martial) Art of Giving Talks

Matilde Marcolli

Fall Term 2011

## 1 Introduction

The purpose of this class is to teach students how to give talks.

Most of what we will be discussing applies to Mathematics talks, but it works just as well for talks in Theoretical Physics. Other fields of science have different lecture formats and styles, which we will not discuss.

### 1.1 Getting your work known

One of the main concerns of scientists is to make their work known to colleagues and other experts in their field. The main venue is, of course, peer reviewed publication in scientific journals, however, other methods are just as important in order to circulate your ideas in a timely manner, received feedback and useful criticism, start collaborations.

In mathematics, the peer reviewing process is notoriously long, so that a paper submitted to a journal may typically take several months or sometimes over a year to be refereed (the record in my own experience was close to five years to get a paper – admittedly a very long one – refereed). Thus, it is important to have also other ways to circulate your work. In mathematics there are two main methods:

- The eprints archive: [www.arXiv.org](http://www.arXiv.org)
- Giving talks (at conferences, seminars, workshops, etc.)

We will not deal in this class with the first one (that has more to do with your skills of written communications, for which there is another class you

can take), but familiarize yourself with the archive and its functioning, if haven't yet done so. As a research mathematician (or theoretical physicist) that is likely to become your standard bedtime reading, so get used to it soon.

## 2 Different kinds of talks

We focus here on giving talks. The main occasions where you can communicate your work in this way are:

- Conferences and workshops
- Seminars
- Colloquium style talks
- Public lectures

The last case is a very different matter, as it assumes a general audience of non-scientists, and it requires a very different set of skills and methods as the other ones. We will only talk about that briefly and focus instead on the first three cases, where one talks to an audience of colleagues.

### 2.1 Colloquium style talks

These talks are supposed to be addressed to a broad audience of colleagues: typically, if you give the Colloquium talk in the department X all people in the department are expected to attend, including students, and not only the people in your research area. Thus, although you are addressing fellow mathematicians (physicists) you should make sure not to assume that they are familiar with the specific problems, technical methods, and peculiar history of your field of expertise.

The rule for Colloquium talks is roughly the following: if the talk is expected to last 50 minutes (the standard duration), the first 20 minutes should be completely understandable to all people in the room (undergraduates, graduates, faculty working in other areas). A good way to achieve this is to use that part of the talk to give a heuristic, non-technical, overview of the motivation and context behind your work and a hand-waving explanation of your result that is aimed at conveying the main idea but not the

technical details. At the end of these first 20 minutes of talk people should be able to walk out of the room with an idea of what you work on and of why it is interesting. The next 20 minutes start to introduce gradually some more technical language and prepare the ground for what you then do in the remaining 10 minutes of talk, which is to give a precise statement of your result and a very brief sketch of the method of proof.

Summarizing: Colloquium talk structure

- First 20 minutes: general introduction and context, heuristic explanation of your result
- Next 20 minutes: gradual introduction of terminology and technicalities
- Last 10 minutes: rigorous technical statement of your result and very quick sketch of proof methods

The last two parts can vary in time between 20min/10min to 10min/20min depending on how much background material you need to introduce before stating precisely your result. It is important to have given already in the first 20 minutes a more sketchy outline of your result, so that people who do not follow to the end will still have an idea of what you have done.

## 2.2 Job interview talks

A very special kind of Colloquium talk is the one you are asked to deliver for a job interview. In this case, keep in mind that you are talking about your work to the members of a department with the purpose of convincing them that what you do is interesting enough that it should make them want to hire you. A bit of shameless self-promotion does not hurt in such cases: in particular focus the background and context discussion on showing that your work fits into an interesting history, and put special attention on giving a convincing non-technical description of your result that shows in particular where its originality lies. Use the more technical part of the talk to convey the idea that your work is also deep in a more technical sense.

Often, at job interviews, you may be asked to give both a Colloquium talk and a Seminar talk (see below). If that happens it is a good way to show more of your work: focus on a result that is easier to explain non-technically for the Colloquium, and use a more technical result for the Seminar. Ideally, the result you choose to talk about in the Colloquium should be one that

can impress your audience by its cleverness and originality, and the one you talk about in the seminar should be one that can impress your audience for its depth and technical complexity.

### **2.3 Seminar talks**

Seminars are the occasion for more specialized talks. Usually the seminar organizer invites speakers close to her/his field of research and the talk is meant as a way to introduce a more detailed discussion about the speaker's work with the research group in that area at the hosting institution. As such, one can expect an audience that already knows the general context and background and that is more interested in seeing and discussing the technical details of your work.

Thus, the structure of a Seminar talk is usually very different from that of a Colloquium talk. Limit the background and context discussion to five to ten minutes maximum, proceed as quickly as possible to talk about your own result, not about the background material and work of others that it relies on. Give as early as possible in the talk the complete and precise statement of your result and leave most of the time in the talk for a reasonably detailed discussion of the method and structure of the proof of the result. Keep your time management more flexible, as you expect more detailed questions from the audience.

### **2.4 Conference talks**

Conference talks are generally somewhere in between the Seminar style and the Colloquium style. There are many different types of conferences.

There are very broad conferences, the most famous in Mathematics being the ICM (International Congress of Mathematicians) that takes place once every four years, each time in a different country. These conferences attract a very wide audience (up to several thousand people). Talks given at such conferences should always be prepared in Colloquium style.

There are smaller conferences that are focused on a particular discipline and field, more like workshops. These are very much like seminars, only collecting experts from all over the world. A typical example in Mathematics of this style of conferences are the Oberwolfach workshops. Since these consist of a selected audience of experts, all talks should use the Seminar style.

There are many intermediate possibility, for example conferences that bring together experts from two different fields with the idea of making them interact in interesting ways. In this case, only part of the audience has the technical background for a seminar talk. It is better to aim at something in between a seminar and a Colloquium talk. These are occasions where it may be useful, if the schedule permits, to ask the organizers to allow for longer talks (there are sometime 1 and 1/2 hour talks) where one can give both the background for the non-experts and the technical details for the experts.

## 2.5 Short communications

An especially difficult kind of conference talks are the “short communications”: these are typically short talks: 30 minutes in the best case, a mere 10 minutes in the worst cases. The American Mathematical Society meetings are notorious for these short communication talks.

The reason they are so difficult is that you need to convey the main idea of your result without having any time at all to give any background to the audience. Just giving the technical statement alone will not work, as your aim is to make sure people come out of the talk with a reasonably clear idea of what you have done, so focusing on a technical statement accompanied by a heuristic explanation is the best way to handle these talks.

## 2.6 Public lectures

This is an entirely different type of scientific communication, not directed scientist-to-scientist but scientist-to-layperson. If you are asked to deliver this type of lecture, you should think of it more as a social and moral obligation that scientists have: trying to communicate the depth and importance of science to the wider audience (who are also the people whose taxpayer money largely supports our scientific enterprise).

In such occasions you do not have to focus necessarily on your work, unless there is some particular aspect of your work which is especially suitable, visually or philosophically, for non-technical communication.

Focus especially on context and on trying to convey to a person who is not inside the scientific community why and how we do what we do.

Be honest: do not invent applications that are not really there, try to explain that there is an intrinsic beauty, depth and importance in basic science as it is, without having to claim exaggerated immediate benefits to

society. The longer term benefits to society can be more effectively and honestly described than any short term gain.

### 3 An important warning

**Do not**, under **any** circumstances, **ever** go overtime when delivering a talk! Make sure you finish your talk in the assigned time.

At conferences, going overtime is a serious sign of disrespect for the other speakers: the schedule is usually tight and someone else is scheduled to speak after you. That person has as much right to his/her share of time as you have. Showing consideration for others is the first requirement for not becoming yourself one of the “bad guys” listed later in these notes.

At seminars, even though it may look less disruptive to go overtime, remember that your talk is taking place in a working day of a typical department and you should understand that people in the audience have other commitments besides attending your talk.

If you see that you have mismanaged your time, and you still have one more very important thing to say at the end of your talk, it is OK to politely ask the seminar organizer or the moderator at the conference session for a couple of extra minutes to finish what you are saying, but keep the overtime to no more than 5 minutes and only after the organizers have agreed to grant you that extra time.

While acting as moderator at a conference (see more later on the role of moderator), I have been, on one occasion, in the position of almost having to physically remove from the room a speaker who went dramatically overtime and would not stop. Creating this type of situation is not conducive to any kind of useful interaction with your colleagues.

### 4 Technical Forms

There are two fundamental ways to give talks in mathematics (and theoretical physics):

- Blackboard talks
- Slides/Beamer talks

The basic distinction between these two methods is that, in the first case, the written part of the talk is created in real time as the talk evolves, along with the spoken part, while in the second method the written part is pre-packaged as prepared slides and only the spoken part is generated as the talk is taking place.

There are variants on these two basic modes: for example, using slides (either transparencies or electronic tablets) on which the speaker writes directly during the talk. These, for instance, are essentially a variant of the blackboard form.

## 4.1 Blackboard talks

The three main things to be very careful about when giving a blackboard talk are

- Time management
- Use of blackboard space
- Keeping in touch with the audience

### 4.1.1 Time management

Writing everything out on the board takes time, especially if you have long formulae or complicated diagrams to draw. You have to find a good way to keep track of time to make sure you deliver all the important points of your talk within the given amount of time. A good way to do that is, when you prepare your notes for the talk, make markers of time (mark down in your notes where you expect to be after 10 minutes, 20 minutes, 30 minutes, 40 minutes). Make sure you have in the room a good visible clock, or bring one with you, so that you can compare as you are giving the talk, how you are doing with respect to the plan.

Prepare your talk in a “modular” way, meaning with parts that are independent of others and that you can skip if time gets tight without compromising the rest of the talk. In this way you can make sure that you will still be able to say the most important things and sacrifice only accessory parts.

### 4.1.2 Blackboard space

This is the same recommendation as for teaching classes, make sure you write clearly on the board, in a manner that is orderly and easy to follow, write large enough that it can be seen from the back of the room (and speak loud enough that it can be heard from the back of the room). Don't erase the same board on which you just wrote: use all the blackboard space completely before erasing and start erasing the things you wrote first, not those you wrote last.

### 4.1.3 The audience

The worst thing that can happen in a blackboard talk (and it does happen often enough) is that the speaker delivers most of the talk while looking at the board and never (or hardly ever) turns around to look at the audience.

Make sure, while you are writing your talk on the board, to keep making very frequent pauses, where you turn directly towards the audience and explain in words what you are putting on the board, adding comments and inviting questions.

### 4.1.4 Do not improvise!

Even if you know everything you want to say back and forth and you think you will be giving a splendid spontaneous talk by just standing in front of the board and improvising: **DON'T DO THAT!**

Most improvised talks end up being a shipwreck and the kind of talks from which people leave the room thinking "Never again!". It is a whole different thing to think quietly on your own about what you want to say, and letting it flow spontaneously while standing in front of your audience, having to keep track of time, of how you use the boards and all that at the same time. Stream of consciousness can produce great literature, but it produces horrible math talks: leave it to James Joyce and to professional improvisers in theater companies, and spend the necessary time preparing carefully what you are going to say! Write notes of your talk: a good way, if you are giving a blackboard talk, is to take sheets of paper, dispose them horizontally (landscape position) so that they resemble more closely the space you have on a board and fill in the talk trying to match on each page what you will have on each blackboard. You can consult your notes while you give your talk, so bring them with you and consult them as often as needed.



## 4.2 Slides talks

The main things to be careful about with slides/beamer talks are the following:

- Do not put too much on each slide
- Do not turn pages too frequently
- Do not give your talk by reading out what's written on the slides!

### 4.2.1 Slides: how dense?

The good side of slides talks is that you can have all your long and complicated formulae written out already and you don't have to spend time writing them on the board while you're giving the talk. That's true, but you should keep in mind that your audience still has to read them while you are giving your talk. So, to make that possible, you should make sure not to overload your slides.

Some latex packages, such as Beamer, have the advantage that they force you not to put more than a certain number of lines on each slide. If you use one of these programs, they will generally prevent you from making your slides seriously unreadable.

If you just use a generic latex environment like “documentclass slides”, or some other text editor, however, remember that the good rule of thumb is that there should never be more than ten lines of text on each slide (including displayed formulae).

If you have a slide that is denser than usual, try to make it follow by one with some graphics or with easier comments, to leave time to your audience to absorb the content of the previous one without rushing through.

If you are giving a talk with physical slides and an overhead projector, it may be useful to ask if you can have two projectors so as to leave the previous slide visible on one while you are putting the new one on the other.

With slides projected from a laptop via a beamer projector this cannot be done, so all the more you should be careful to leave a slide visible long enough that people have time to read it.

### 4.2.2 Time for each slide

Make sure that you leave each slide on for long enough that people can read all that is written on it and take it in before you move on to the next slide. Keep into account that at the same time they are also listening to what you are saying, so the time to read the slide is longer than what it would take you to read the text written on it while nothing else is happening around you.

Having a large number of slides that you keep changing very fast only leads to a completely incomprehensible talk and most people in the audience will just stop paying attention to it after a few minutes. It is much better to have fewer slides with just some crucial information on them and you talk at length over each slide, so that you can convey to the audience the rest of the information that you did not put in writing.

It is very convenient to have also a blackboard available, even if you are using slides: you may want to answer a more technical question, where you need to write down some formulae to answer, or just you may want to add some comments to some of what you are saying.

### 4.2.3 Written and spoken parts

It is not a good idea to give a slides talk by reading out loud the exact words you have written on the slides. That makes the talk awfully boring and people quickly stop following you. People can read the slides on their own: it is much better to write on the slides only a few keywords and the formulae, and then do all the explaining by talking, while people look at the formulae written on the slides.

## 5 Dangers and Annoyances

Giving talks is not only about communicating your work to others, but it is often also about defending your work from other people's criticism.

Of course, there are circumstances where criticism may be to the point. It may just be that there is a mistake in your work. That happens: for a scientist it is just part of the natural occupational hazards. It is not the purpose of this class to teach you how to avoid that: experience and being careful in your work is what will help you avoid mistakes. In any case, remember that making mistakes is a normal part of life for a scientist: science is a self-correcting process.

Ever tried. Ever failed. No matter.  
Try Again. Fail again. Fail better.  
(Samuel Beckett)

You make mistakes, you correct them, you make progress. That's the healthy way science works: only narcissists are pathologically afraid of making mistakes, because it tarnishes their inflated ego image.

I am not talking then about how to avoid mistakes and deserved criticism. What this class can teach you, instead, is how to defend your work against unjust or inappropriate criticism, and how to detect certain typical patterns of behavior in the audience of your talks that can potentially harm or disrupt your lecture and prevent you from getting your message across, and how to minimize the disturbance and not let your talk be derailed.

In this respect, the art of giving mathematical talks is very much like a martial art.

I introduce in the rest of this section a gallery of characters, artistically illustrated by some of Patrick Valenza's "Deviant Moon Tarot".

Each of these characters represents a typical form of behavior that you are likely to encounter, sooner or later, in someone sitting in the audience of one of your talks. If you are not careful and you have not learned some techniques on how to handle them, they can seriously disrupt the course of your lecture and even tear it apart completely.

## **6 Badass N.1: The Emperor**

The emperor is the typical figure of power and authority in a given field. It refers to those people who have a tendency to think that the whole field is their own private property, and in particular that only what they do in the field is important, that the work of all others is derivative and that in any case they are not being quoted enough. These are typically pathological narcissists, so one needs to take this into account in interacting with them.

The trouble of having The Emperor in your audience is that he (it is rarely she) can very easily disrupt your presentation completely, by continuous interruptions, by running his own commentary while you are trying to stay focused on delivering your talk and by distracting the rest of the audience.



Figure 1: The Emperor

The Emperor is by far one of the most dangerous encounters you can make in the wilderness of the conference rooms.

## **6.1 Defensive strategy**

There are not many things that you can do to defend yourself effectively, if the Emperor is determined to disrupt your presentation. Of course, you would just like to tell him to go to hell, but that's not the ideal solution (much as he would deserve it): one should always try to maintain a courteous and civilized interaction with the audience, even when some of the people in the audience are not returning the favor. So what can one do?

### **6.1.1 Defuse tension**

The Emperor will likely attack you on priority issues, because that is what it is all about, showing that he did it all and that your work is, at best, irrelevant. Try to defuse the confrontational mode, by giving open praise to his work in response to his objection, without conceding anything on your own contribution. Example: "Indeed, as we all know, some very important work on this topic was also done by ..." or some such thing.

Effectiveness: medium/high.

### **6.1.2 Gain time**

If the Emperor tries to claim your result as his own, by quoting some paper of his you do not know well (but you suspect is not really relevant to what you are saying), try to defuse the immediate confrontation by something like: "Indeed, I am very interested in this remark, maybe you can tell me more about it after the talk."

If the Emperor continues to interrupt repeatedly and you see you are having problem keeping your presentation on tracks and on time, explicitly ask for the discussion to be postponed to the end of the talk. If asking the Emperor does not help, explicitly ask the moderator to intervene on your behalf. Be careful though, the moderator may be unwilling to risk a direct confrontation with the Emperor, so check before your talk, once you know who the moderator is going to be, how much help you can expect from him/her in tackling the disruptions caused by the Emperor.

Effectiveness: medium/low

### 6.1.3 Preemptive measures

Keep in mind that the Emperor is a pathological narcissist: part of the reason why he keeps interrupting your talk is because he cannot stand the fact that, during those fifty minutes, the attention of the audience is focused on you and not on him. His continuous interruptions and complaints are a way to try to divert the attention of the audience back to him and away from you. That your talk gets disrupted in the process, he could not care the less.

A good way to try to avoid the worst case scenario is to make sure (if you know in advance you may be having the Emperor in the audience) that you arrange in your talk to make frequent references to him and his work. In this way, he will hopefully feel that his need to be at the center of attention is sufficiently satisfied that he can let you continue with your talk.

Effectiveness: high.

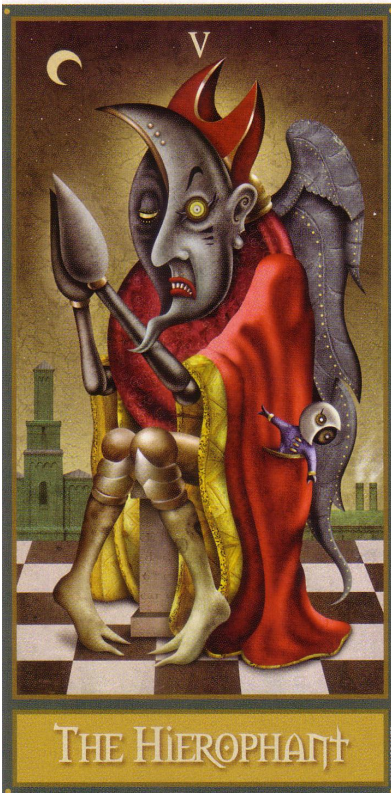


Figure 2: The Hierophant

## 7 Badass N.2: The Hierophant

The Hierophant represents a priestly figure. What this refers to here is the type of character who feels entitled to represent (and defend) a certain “orthodoxy”, a certain school of thought, or a certain group of people within the field.

Typically the hierophants are the minions and lackeys of the Emperor, his entourage and fan club, those who think that the Emperor represents the only and true orthodoxy in the field and that anything that is done in a different way should be opposed and suppressed.

These characters are generally less disruptive than the Emperor himself, as they are really only fighting you on someone else’s behalf. Nonetheless, they can sometime manage to seriously disrupt your presentation.

## 7.1 Defensive strategy

Once again, one should keep in mind that it is in everybody's interest to try to defuse tension and not to escalate it. If some people are behaving disruptively, it should be clearly seen that *they* are the ones who are causing a problem. Nonetheless, your first priority is to be able to give your talk and to convey to the audience what you have to say. So you should try to minimize the disruption.

### 7.1.1 Defuse tension

This is essentially the same advise as in the case of the Emperor. To an objection that substantially is of the form: "This is not the right way to do things because this is not what what we do (= what the Emperor does)", which is what you expect to hear from the Hierophant, you can reply along lines such as: "There is also another approach to this problem, developed by the Emperor and his school, which is a very interesting approach that gave nice and important results. However, this is not what I am talking about today: I am talking here about a different approach, and I will be focusing only on the specific features of this other approach..."

Something along these lines would recognize "their" work without having to make any concession on their approach being the only game in town.

Effectiveness: high (unless the Emperor is also present and is delegating to his hierophants the task of attacking you: in that case they won't give up so easily and the effectiveness of this line of defense becomes medium/low).

### 7.1.2 Gain time and get help from the moderator

This is also the same advise as before. The Moderator may be much more willing to be proactive in preventing the disruption of your talk if your opponent is a Hierophant rather than the Emperor himself. In the best possible circumstances (especially if the Emperor is not himself present) you may be able to avoid the Hierophant's disruption by making small concessions as indicated above and asking (with the help of the Moderator) to postpone any further discussion to the end of the talk.

If the Emperor is present, then go back to the previous section, and deal with the Hierophant as if you'd be addressing the Emperor directly, as that is really the person who is speaking to you through an intermediary.

Effectiveness: medium/high





Figure 3: The Chariot

## 8 Badass N.3: The Chariot

This is a nuisance of an entirely different nature. In particular, unlike the Emperor and the Hierophant, who are actively and intentionally trying to disrupt your talk, the Chariot may achieve the same effect, but in a completely unintentional way.

This is the kind of mathematician who has a very literal mind, which means that he/she needs to examine in detail every definition and every small step in the argument before proceeding further. In a talk, you are always necessarily cutting corners and being a little hand-waving in some of your arguments, for reasons of time constraints, but a literal minded person in the audience will feel very uncomfortable with that, and may keep interrupting you to ask for more details. These interruptions can become frequent and

may appear aggressive, because as the talk progresses, the Chariot is more and more disturbed by the missing details and afraid of not being able to follow what will come next, without having seen all the details of what you've said so far.

## 8.1 Defensive strategy

Keep in mind that the Chariot is *not* trying to disrupt your talk, even though it may seem like it. So he will certainly be more sensitive than the Emperor of the Hierophant to your plea to be allowed to deliver your lecture. However, there are a few things you can do to minimize the disruption caused by this kind of character.

### 8.1.1 Prepare additional details

When you prepare the talk, be careful about where you are cutting corner, and make sure you have a quick way to fill in more details (on a blackboard on the side, for instance) if asked during the talk. In most cases, just giving a little more information will be enough to make the Chariot momentarily happy and allow you to continue.

Make sure that you prepare ways to convey more information with a minimum expenditure of time, so that these frequent questions do not delay you too long. That's why it is better to try to anticipate where these questions may occur, rather than figuring out on the spot how best to answer them: the second way is much more time-expensive.

Effectiveness: medium/high.

### 8.1.2 Gain time

If the Chariot's questions become too frequent and insistent, politely ask if you can give your more sketchy version of your talk now to finish within the time constraints and then privately meet with the Chariot and give a much more detailed explanation of all the missing details. Since the main purpose of the Chariot is to understand your result and not to disrupt your talk, such an arrangement will usually be agreeable to him/her and he/she will allow you to complete your talk. You may count on some help from the Moderator in getting this message across, but it will usually succeed,



Figure 4: The Fool

especially if you have already done what suggested in the previous subsection and demonstrated in this way your availability to giving more details.

Effectiveness: high.

## 9 Badass N.4: The Fool

This is the kind of person who happens to be sitting in the talk, but does not really belong there. Typically, it can be a kind of crackpot character, asking very strange questions, that linger on the verge between complete nonsense and vaguely pertinent questions. The Fool can also get very agitated if his/her questions are not answered or dismissed.

## **9.1 Defensive strategy**

Recall that, the Fool may be a fool, and may be saying completely nonsensical things, but people always deserve to be treated courteously.

### **9.1.1 Don't ignore questions but don't waste time**

Try to answer the Fool's questions, even if obviously nonsensical, by a few words. Don't try to explain why they are nonsensical, that will only provoke the Fool into an endless discussion you don't want to have anyway, especially in the middle of your talk. Just think of something quick and innocuous to answer that will convey the idea that you took the question into account. Don't mock or deride the Fool. Try to keep your answers short and dry and move on quickly to the continuation of the talk, without wasting time. Especially, do not show any hesitation, a prolonged silence on your side will be seen by the Fool as an encouragement to provide more details of whatever crackpotish idea his/her question was meant to illustrate.

### **9.1.2 Gain time with the help of the Moderator**

This is a case where you can really ask the Moderator to help you out if the Fool becomes more intrusive and aggressive with questions and interruptions. Try to postpone the discussion to the end of the talk, claiming there will be more time, but be careful not to get caught by the Fool, after your talk is over and everybody else is leaving, for a long and detailed explanation of his/her latest theory of everything. If worse comes to worse, the Moderator (and not you) should ask the Fool to leave the room if he/she cannot stop disrupting the course of the talk. (Of course, in principle the Moderator should say the exact same thing to the Emperor and the Hierophant, when their interruptions become unbearable, but I still have to come across a Moderator who has the guts to do that.)

## **10 Badass N.5: The Magician**

The Magician, or the Wizard, is the quick smartass, the one who wants to show he's got it before anybody else in the room, and who will likely try to anticipate the next thing you're going to say and spoil your punchline, or try to ask the clever question that shows he/she knows it all.



Figure 5: The Magician

## **10.1 Defensive strategy**

Although the Magician can be very annoying at times, he/she can also be useful, as some of the questions/comments you will get in that way may be indeed quite intelligent and may suggest to you a different angle under which to view parts of your own work. So having the Magician in the audience is a mixed blessing.

### **10.1.1 Praise the question**

If a question seems like a smart question, and especially if, right on the spot, you are unsure how to answer it, start by praising the question: a simple “This is a very interesting question” will get you in a more positive and less confrontational mode of interaction with the Magician. Don’t be afraid to answer “I don’t know” or “I would have to think about it: I had not considered this.” These are perfectly legitimate answers to a question for which you do not have an immediate answer. Thank the Magician for asking an interesting question and/or raising an interesting point.

## **11 Chimeras**

When you start attending talks and giving talks frequently, you will see more and more frequently one or the other of the characters listed above. There are also cases where the same person may exhibit traits of more than one of these characters: for example you may have cases of Emperor/Magician, Hierophant/Chariot, Emperor/Chariot, and so on. The ones illustrated above are just rough guidelines aimed at refining your defensive skills in preparation with a possible encounter with one or another of these possibilities.

## **12 A bonus: Justice, or the Moderator**

The Moderator is the person who has to guarantee the smooth running of the conference session, or seminar, or colloquium talk.

The first task of the Moderator is to introduce the speaker to the audience. In a conference, this usually means standing up in front of the audience and presenting the speaker: “This is Prof. So and So from the University XYZ, who will be telling us about...”



Figure 6: The Justice

In a Colloquium talk, or on the occasion of some special conference with a much broader audience, the Moderator usually also tells a few words about the speaker, recalling his/her career and major achievements (prizes etc). In fact, in such cases the audience is not only composed of people in the same field of specialty and it cannot be assumed that they are already familiar with who the speaker is.

During the talk the Moderator has two main tasks: protecting the speaker from disruptive actions from members of the audience and protect the audience from speakers running overtime.

In general the task of being Moderator at conferences is assigned to some well established persons in the field. This is the tradition, to ensure that the Moderators will (in principle) be in a position that makes them capable of tackling Emperors and Hierophants, when they seriously misbehave.

Usually, the Moderator agrees with the speaker, before the beginning of the talk, on a signal that the Moderator can discretely send to the speaker to warn him/her of an impending overtime risk. For example, five minutes before the end of the time slot allotted to the talk, the Moderator may stand up from his/her seat, or raise a colored card, something that may be clearly visible by the speaker, without being too distracting for the audience. If the speaker goes overtime, the Moderator has the right to interrupt the talk (by whatever means he/she considers necessary).

## 13 The rules of the game

We are going to organize our class sessions in the following way: the speakers prepare their talks and aim at delivering a standard 50 minutes talk, either as a blackboard or as a slides talk. The speaker can choose to play against at most 5 penalties, which are the cards Emperor, Hierophant, Chariot, Fool, Magician, that are distributed to people in the audience. The people playing one of the penalties will have to create some disruption in the talk, according to the character they are representing. Another person gets the Justice card and plays the Moderator.