Online Course in Science Journalism

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Lesson 8 - How to shoot science

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8.1 Introduction

To make a good science video (or any video) you have to think in three dimensions: First, you have to have a **remarkable story** in mind; second, you have to have an idea of how to **visualise** it; and third, you have to know how to support it with **sound**.

Filming a story requires more hands-on experience than any other journalistic work. You have to not only grasp the story, but also organise the shooting and edit the materials you acquire.

To achieve the final product you have to use many gadgets – cameras, microphones, and computers with editing software. Usually, these are operated by specialist crew members, but there are situations where you may have to do this yourself. Therefore you have to understand the individual stages of science video making, the technology available and how to communicate your concepts to your crew. Even if you don't have to operate equipment yourself, the more you know about the possibilities and limitations of what you have, the better you will be able to work with your teammates.

By the end of this lesson you will have a basic idea of the stages of work that are awaiting you, which obstacles can arise and how to bypass them.

8.2 Before you start shooting

Let's start by acknowledging the fact that TV is the most superficial medium of all. Its popular power comes from the strength of its images, not the amount of words or number of ideas you are trying to convey.

Even if you have done just as much preparatory work and research as your print media colleagues, your final report will use only a small fraction of the information compared to a newspaper article. While at the beginning, you are bursting with acquired knowledge, as you proceed you will realise that the amount of information you can present within a given time is getting smaller and smaller. Pretty soon, you will find that in a 10-minute report you cannot explain the nuances of quantum physics or the biochemical processes in a cell.

A TV show cannot be stopped to let a viewer think or check an unfamiliar term in a dictionary. A TV show also competes with other distractions, both in the home and on other channels via the remote control. Therefore, you have to be perfectly clear about what you want to say and what really matters in your presentation, and you need to present it in an engaging and entertaining style to hold a viewer's attention. As is true for science in any medium, it is always most attractive to discover the relationship between research and their everyday life, or how their life can be possibly changed or affected by research. Of course this means that you have to know who your audience is (see chapter 1 [http://www.wfsj.org/course/lesson.htm?e=e01#L01P05]).

8.3 Planning the story
8.3.1. The right visuals

Science may be all about facts, but good television is all about exciting pictures. It is a common tendency to focus on getting all the important interviews you need, and to forget that the story must be told through good visuals. These require just as much if not more planning than just finding and arranging interviews with experts.

When you develop your story idea, try this exercise: close your eyes and imagine how the piece will begin. **What kind of action best conveys the scientific story?** In some cases this is obvious, but in many other examples, it requires some creativity to think of moving images that can best tell your story. In some cases, 3-D animation might be most useful for explaining complicated topics or processes.

8.3.2 The story outline (pitch)

Once you have figured out what kind of images will appear in your piece, you can include those ideas when you pitch your story to a TV producer.

In general a pitch should not exceed 150 to 200 words. It should contain a "**hook**" – a sentence that immediately attracts and impresses the person responsible for TV assignments – and a few sentences about the content and significance of the story you've chosen.

In some TV stations a special effort is made to plan narrative TV stories. Jan Lublinski writes:

In Germany it has become increasingly popular among TV science journalists to use a technique called the storytelling sentence (See also lesson 1: 1.7. "journalist's camera"

[http://www.wfsj.org/course/lesson.htm?e=e01#L01P07]

and 1.9. "narrative writing."

[http://www.wfsj.org/course/lesson.htm?e=e01#L01P10]).

EXAMPLE:

You will see this sample pitch again in Exercise 1 of Section 8.19 Self-teaching questions

[http://www.wfsj.org/course/lesson.htm?e=e08#L08P32]:

From battlefields to our homes

A revolutionary substance, developed originally for neutralisation of poisonous gases, will now clean polluted air in our homes. Czech researchers were the first in the world to find a substance that can decontaminate military gases without causing harm to hi-tech electronics. Now, the substance will be used in the civilian sphere, for example as a component of paints on the interior and exterior walls of our houses. Our environment is filled with invisible harmful particles released by glue, rubber, carpets, lacquer and various emollients that can have a negative effect on us.

Thanks to a new technology called anatas modification of titanium dioxide (TiO2), researchers at the Institute of Inorganic Chemistry, Czech Academy of Sciences, in cooperation with the company Rokospol, have created a substance that triggers photocatalysis (a reaction that uses light to split organic substances), to significantly reduce the amount of harmful elements in the air (within 10 hours by approximately 10 %) and transform them into harmless water and carbon dioxide. Its use in future in multifunctional paints will not only enhance the durability of surfaces and beautify our walls – but also protect the air we breathe.

8.4 Scouting field locations, pre-interviews

When you have chosen your story, found the best researcher and best research facility, and had your story approved, it is time for scouting. While print journalists might not even need to leave their chair, as they can get all they need through the telephone or the internet, you have to **actually get to the lab and find out what you can do there** to improve your images.

Ask the researchers to show you around not only the lab but also around the attached premises – from roof to cellar, if possible. Have a look at all the research equipment, technology, the menagerie and all other related stuff. **Get as close as you can, touch things, ask questions and have everything explained**. Try to arrange for demonstrations of specific activities. Usually, it is not possible to shoot, for example, lab procedures live on real samples. Ask the researchers to prepare samples that will not suffer from contamination caused by shooting, and to demonstrate different phases of research on these samples.

Often, there is not much to be shot because the equipment is enclosed in boxes, the data appear on dull computers, and the researcher's study is just a mess. And yet, you need to find a way. Usually, it helps if you **ask the researcher to show you how he or she actually carries out the research**, e.g. how samples (or other objects) are acquired, transferred, stored and manipulated. Look for anything that moves or blinks or is coloured. Also watch out for noises that come with good images. A perfect first image is accompanied by a noise, e.g. the image and the sound of a coffin being opened with a shovel – this really draws people in.

The scouting and pre-interview will also help you get on closer terms with researchers, see what they actually look like, **how they speak** and cooperate. And vice versa – they will learn the same things about you. When you get to the shooting itself, you can treat each other as acquaintances.

Sometimes scouting field locations is not possible, because, for example, the lab is abroad and you lack funding for a research trip. Then, you have to arrange as many details as possible by phone or internet – and rely on good luck and on your own ability to improvise.

8.5 Include people to illustrate your story

As science reporters, we are usually very interested in the research and data behind new developments. However, our audience isn't so technically inclined. Often, giving readers or viewers too much detailed information just overwhelms them and they will tune out before you can get them excited about your report.

Using people in your stories is the best way to avoid this problem. **Your audience might not be interested in scientific facts and figures, but almost everyone is interested in human stories**. If you can explain and show how your science topic affects the average person, you are much more likely to reach a lot more people.

a. People as examples

One good way to introduce a human element is by finding someone who illustrates one of the points you make in your story. Tell your readers and viewers how a particular scientific phenomenon affected someone personally, and they will get hooked into your story before they realise it.

EXAMPLE:

In this Euronews report, women and children in a Masai community disinfect their water using plastic bottles and the sun. Doctors at a nearby clinic say cases of water-borne diseases have been reduced as a result.
[http://ec.europa.eu/research/star/video/water_research_en.mov]

b. People as a way to weave together the story

Don't just use a human example of the problem described in your report at the beginning – keep referring to these people throughout the piece as a way to link together all the disparate elements you want to highlight. Also, come back to the people you introduced when you get to the end of your piece. Remember that your viewers are going to want to know what happened to them.

EXAMPLE:

The link below includes a video (see the menu on the right-hand side). It begins by talking to a man who had surgery three years ago to treat the arthritis in his knee. At the end of the piece, the story returns to him as he decides what to do next.

Therapy for arthritic knees often as effective as surgery: study

[http://www.cbc.ca/health/story/2008/09/10/knee-surgery.html]

8.6 Create meaningful graphics
8.6.1. Describing detailed processes

When explaining science stories visually, sometimes it's easy to run out of pictures. If very detailed processes are important to advance your story, don't just run pictures of laboratory instruments or people on the street to illustrate what you want to say – use graphics.

This requires finding an editor or graphic designer who understands what you want to say and how you want to say it, with the skills to take your concepts and create graphic illustrations. It also requires allowing enough time and money to produce something of quality. Don't expect to get a good graphic if you only allow the editor/graphic designer a day or two to come up with it. Also, help her or him by finding scientific books with the kinds of illustrations that show the things you are trying to explain.

8.6.2. Outlining lists effectively

One of the best reasons to use graphics is for a series of items that you want to outline. If you just read the list during the report, viewers are likely to miss something. Make it easier for them by listing the items or points in a graphic.

It's important to remember that the graphic doesn't have to match what you say exactly word-for-word, especially if the voiceover is long. Remember that if a viewer has to mentally choose between absorbing spoken information versus visual information, visuals win every time. Summarise what you are saying to give the audience a reference point to visually focus on while you explain the concept in more depth in a voiceover. Keep the list visually clean and simple.

EXAMPLE:

Graphic lists are used in the piece you saw earlier in Section 8.5 on arthritic knees:

Therapy for arthritic knees often as effective as surgery: study

[http://www.cbc.ca/health/story/2008/09/10/knee-surgery.html]

8.6.3. What type of graphics?

Rule Number One when using graphics is: keep it simple.

It is much better to show the viewer a small amount of information than to overwhelm your audience with a packed screen full of details all at once. Cluttered graphics that flash by quickly might as well never have been created in the first place, because only a few people will get what you are trying to say.

If you have a lot of information that must be conveyed visually by graphics, consider using a series of full screens, rather than just one. Also, if you have the staff expertise and opportunity to create an animated graphic to explain your point rather than just a still visual, this will add great value to your report. Just remember always to keep it very simple, with large letters and numbers for the fonts.

Music and sound effects can also add value to your graphics. They especially encourage and allow the viewer to linger longer on a still visual without losing interest in the picture.

Ask researchers for photographs, graphics, animations, and videos made during research. These can prove very useful.

EXAMPLE:

This story on How Stuff Works explains the basics of volcanoes with simple graphics..

[http://videos.howstuffworks.com/howstuffworks/231-how-volcanoes-work-video.htm]

8.7 Draft treatment

Experience shows that the story you write isn't necessarily the one you end up shooting, and that it will undergo more changes as you edit it. Making a video report is a creative process from the beginning to the end. You need to go step by step, respond to actual situations and make adjustments to your original design. Yet it is important to start with a plan, to have a vision of the final story, and to schedule sequences. That is where a draft treatment comes in.

The draft treatment tells you:

1. What are the **opening and the concluding** sequences.
2. The **narrative structure** – how much space is given to this or that sequence.
3. The **pattern** in which sequences are organised to convey the specific angle of your approach to the story, as well as conflict, tension, and funny moments.
4. A rough **outline** of what people are going to say.
5. The **shots** you need – where and what is to be shot.

To go with the draft treatment (mainly for your own reference) will be a:

1. List of research facilities and **field locations**.
2. List of people to talk to and a list of **questions** for each.
3. List of available **footage** (from archives, supplied by other organisations, from the EU or other large governmental and non-governmental groups, or made by researchers themselves.)
4. List of all contacts – **phone numbers and e-mails**.

EXAMPLE:

You can find an example of a draft treatment in Section 8.21: Self-teaching questions: Exercise 2.
[http://www.wfsj.org/course/lesson.htm?e=e08#L08P34]

8.8 Organisation of shooting

Let us assume that you are not working for a big production – these are rare and there are just a few countries that can afford them. Let us rather suppose that you are limited not only by your budget but also by the lack of experienced staff capable of shooting science stories.

Ideally, there are three people in your crew – you (the **science journalist**), the **cameraman** (or camerawoman), and the sound technician, although sometimes you can manage without a **sound technician**. Sometimes there will also be a **producer**, who may handle some of the logistics or help with other tasks such as writing. All these people will find themselves pretty busy on location.

The journalist can, naturally, plan the story, write the script and direct the shooting if there is no producer to share any of those jobs. The cameraperson can operate the sound and the lights if there is no technician. Either the journalist or the cameraperson is also a driver, because you need to have a vehicle to transport all your equipment.

Sometimes, you might be left all alone. However, it is advisable to bring the crew with you whenever possible. The different roles they will play require full commitment. **The more people involved, the lower probability of a mistake or omission**. Other people can also provide you with valuable opinions, which come in doubly handy when you reach a deadlock.

Choice of crew is very important – it is not only their professional qualifications but also their character that matters. **They have to be good team players, punctual, reliable and able to cope well with stress**. The shooting itself is rather demanding and having to calm down a colleague who has lost his nerve means a waste of precious energy you could otherwise use in your challenging job. However, at many stations, you cannot choose the team you work with, so you have to try to get the best out of the people that are there.

Consider your interactions with the team members as part of your professional work. Let them feel them that you value their work. Many mediocre TV journalists blame their cameraperson if their report is no good. Good TV journalists manage to do a reasonable report even with a difficult team.

Shooting, of course, does not have to take place exactly as lined up in the draft treatment. You can shoot in a random order and organize the sequences to your liking in the cutting room. Also, always be prepared and flexible enough to take advantage of **unexpectedly good visual opportunities** that might arise when you are on-site. You never know what you will find!

Shooting is also rather time-consuming and you can never tell what obstacle is going to occur. **That is why you should always schedule appointments to last, say, four hours, instead of an estimated two, or a whole day, instead of a half-day.** This way, people will not get annoyed if the shooting gets delayed. And if the shooting goes as estimated, everybody will be happy.

8.9 Equipment for shooting

While scouting locations, you should decide what equipment you are going to use:

- You cannot do without a **tripod**, which enables you to shoot interviews, long steady shots or panoramic shots.
- For interviews you will need **microports** (small microphones attachable to shirts).
- **Macro lens attachments** are helpful when shooting small objects, samples or insects.
- **Teleobjectives** are used for zoomed-in shots of buildings or natural phenomena from greater distances.
- **Cables** may be needed connect your camera with the videoport of microscopes, even though most microscopes today are attached to computers and all that is happening on the slide can be recorded from the monitor.
- If you film in a lab with computer screens, make sure you have a **camera** that can be **adjusted to the frequency of the screens.** Otherwise you will not be able to show the screens clearly in your report. If they use LCD displays, you don´t have to worry.
- Last but not least, you might need **white light lamps** and **colour light lamps**.

Ideally, you should arrange equipment by explaining to your cameraperson your goals and relevant details, and letting him or her provide what's necessary. But keep up-to-date with new developments in technology, which are becoming increasingly user-friendly.

Before leaving, always **be sure that every single gadget works**! You are entirely dependent on them! And bring more tapes than you expect to use, in case you discover something compelling that you didn't expect to shoot.

8.10 On location

The better prepared you are and the better you have prepared your interviewee, the more smoothly your shooting will go. However, you need to be aware of the fact that the people you are going to film are often facing a camera for the very first time. They do not know what is going to happen and what you expect them to do. It helps to repeat to them your goals and sum up what you are going to shoot at the location. **You become a psychologist who knows how to deal with everybody**. You are also a director, the boss – people need to feel there is at least one person who knows what to do.

8.10.1 Descriptive shots

Remember to look for more than just the obvious picture to tell your story. **Think about related elements that might offer good visuals, even if they are not the main point of your story.** For example, if you were reporting about research into a highly infectious disease and have access to a top-level facility – such as the Karolinska Institute in Stockholm, the Pasteur Institute in Paris or the Centers for Disease Control in Atlanta – you might shoot visuals of the scientists getting into their sterile clothing and going through air locks so that you can describe the elaborate and fascinating procedures they go through to protect themselves and the public.

Watch for **good reaction shots**, especially those involving people. For example, if the story is about a new medical treatment, make sure to show people interacting with it, not just pictures of the machines involved.

You can also profile parents or relatives who are caregivers – not just the patient who may be too ill to talk – as a way to understand the benefits of the treatment. Anytime you can humanise a science story by showing how it affects people, you increase your chance of drawing in a viewer who may not be interested in your topic, but is curious about the people involved.

8.10.2 Shooting in a lab

Sometimes, the actual research facilities are great – lots of exciting installations, glass tubes and colourful solutions, all inviting to the camera. However, these are exceptions. Frequently, you will encounter dull premises equipped with computers and expensive high-tech machinery that is hidden from view. Or the labs are old and ugly, making you wonder how anything could ever be discovered or solved here. Yet you somehow have to create good visuals.

Sometimes, it works if you use careful **lighting** i.e. darken most of the room and shed light only on the part you are interested in. Light and darkness create a nice, somewhat mysterious atmosphere.

Researchers also tend to perform the most important operations facing a wall, or, even worse, turned into a corner, where the camera simply won't see. In these cases, it is always worth persuading them to move to another place where you can fit in the camera, or where you can shoot from different angles.

8.10.3 Shooting work in progress

Never forget that you are not shooting current affairs but scientific work. You cannot be flying around and shooting in real time. Instead, you need to **shoot phase by phase**. Also remember that you will often be shooting amidst a professional working environment – be respectful of other scientists who are not involved in your story but who are also performing important duties.

Find out what kind of "action" you can film in the lab – the more action you shoot, the better. There is nothing worse than running out of visuals. The shots need to be not only illustrative but also look good. For single scene it is best to get shots at different angles and distances. The more material you have, the more **flexibility** you will have in the edit suite later.

EXAMPLE:

Take one of the most common lab tasks – **working with a pipette**. A lab worker takes with one hand a pipette from a holder on the lab bench, opens a box with the other hand, and attaches a clean tip to the end of the pipette. Then, he or she opens a vial containing a fluid sample, draws up a certain amount of the sample into the pipette and releases it into a tube filled with another liquid.

An experienced lab worker will perform this task in five to 10 seconds. You will be shooting it for perhaps up to as much as 30 minutes, depending on the complexity of the manoeuvre. One tip is that it will be quicker to use a DV camera to get hand-held shots to follow the lab worker's every move, for ease of repositioning the camera for each shot. Only close-ups need to be shot using a camera mounted on a tripod.

It is very important that the lab worker sits in a position that allows you to see his or her hands and everything he or she does. Light up both the workspace and the person. Shoot with a variety of distances (for a primer on shot types see for example http://www.mediacollege.com/video/shots/ or http://www.dml.kuleuven.be/toledo/2_1_1.php):

1. Begin, for example, with a **medium long shot** of a hand reaching for the pipette.
2. Then ask the person to "freeze," change the angle, and shoot a **close-up** of the hand taking hold of the pipette.
3. Again ask the person to freeze, change the angle of the camera, ask the person to resume work, and in **medium close-up shoot** the other hand opening the box with clean pipette tips, as the lab worker picks one and puts it on the pipette.
4. Again, change the angle of the camera and in **medium long shot**, film how the sample is taken into the pipette.
5. Then, ask the person to repeat the step and shoot again in maximum detail (camera attached to tripod), so as to see the level of liquid in the vial going down, as the pipette tip fills up.

By continuing to change the angle and distance you will have more material to choose from when editing. Do not forget to shoot the whole process in long (full) shot so that you can see the position of the researcher in the lab.

This way, you will provide yourselves with material that not only illustrates a research procedure, but also gives you flexible space for commentary. You can edit these sequences into 30 seconds, or maybe just 10 seconds.

8.10.4 Shooting in biological labs

Sometimes the samples your researchers use can suffer from contamination during shooting. That's why you have to ask the researchers in advance to prepare **samples that are contamination-resistant** so that you can handle them with no fear of causing harm to the samples, or (in the case of bacterial cultures) infecting yourself. Sometimes, when cultures are grown on lab plates, the samples will develop into different patterns in different phases of the process. Ask the researchers to have different phases/patterns ready at the time of shooting. As you can see, you will often be shooting a "model" of the research rather than the real thing.

8.10.5 Filming laboratory animals

In some countries, the public is very sensitive to the idea of experimenting on animals. Always consider the situation in your country. Sometimes, you can shoot the whole experiment without making **animal rights activists** angry. But in countries like Switzerland, Great Britain or the United States, the response can be fierce. Also keep in mind how the public may react against the researchers and make sure they are aware of this in advance in order to be ethical and fair to your professional contacts.

8.10.6 Filming in operating theatres

In operating theatres, you have to arrange the shooting so that you are not in the surgeon's way or touching things because the surrounding environment is sterile. While scouting the location, you learn how the operation will proceed so you can get ready for the individual phases.

Ask the scientist or doctor you are working with if they **know a patient** who might be willing to appear on TV. Be patient and if at first you do not succeed, ask again.

If you meet the patient for the first time – it is always better to do so before the shooting takes place – show him or her that you are genuinely interested, and take the time to listen to her or him. Explain your work as a TV reporter. **Keep in mind that the patient is investing a lot of trust in you, so you must treat them with respect.** When doing interviews, let the patient explain his life and his personal suffering, not the doctor. In general, the doctor should explain a disease or judge a treatment.

For the surgery itself, provide the surgeon-in-chief with a microport or another kind of microphone so that you can record his or her comments even if he or she is wearing a surgical mask.

Sometimes, the surgeon can pause during the operation and let you have a closer look into the surgical area. You can also make use of the cameras that are attached to medical devices and the recordings that appear on monitors in the operating theatre or elsewhere. **Do not forget to shoot details** of the medical equipment, hands, eyes, the room as a whole, and the patient's face with the breathing mask if he or she has given his or her consent.

8.10.7 Keeping track of what has been filmed

While shooting individual sequences, keep records on what you have just shot, or – even better – ask the researchers to describe on tape the shooting location, items and activities that were filmed. That will help you to tell what is what later while you are editing your material.

8.10.8 Surprises on location

Despite agreements made in advance, you can still arrive on location to find that nothing is prepared. So you will have to improvise and it's good to have a back-up plan to minimise the damage.

The three most important shots are:

1. **Long shot** (to show the place in context)
2. **Medium long shot** (to show the scientist with items of interest)
3. **Close-ups** showing details of the most important items.

For more discussion of what to do when problems arise, see Section 8.25: Self-teaching questions: Exercise 4

[http://www.wfsj.org/course/lesson.htm?e=e08#L08P38]

and Assignment 4 in Section 8.27.

[http://www.wfsj.org/course/lesson.htm?e=e08#L08P40]

8.11 Working with the interviewee
8.11.1 Preparation and shooting

It's important to meet the person beforehand – to get familiar with them during the scouting or elsewhere.

Point out that this is not a live broadcast but a recording that can be **edited afterwards**. Before the shooting, go through your questions and make sure that the wording is clear and accurate – the researcher will feel more secure if he or she knows what you are going to ask and that his or her slips of the tongue, pauses, and coughs can be deleted. Quite understandably, the researchers' main worry is that they might lose face in front of colleagues and audiences. It is also good to make it clear that the recording of the interview can be stopped at any time and resumed later.

The person you are interviewing has to maintain **eye contact** with you. Tell them that they shouldn't pay attention to the camera. During the interview, stay alert and make sure that the person is really looking at you, not into the camera.

It is desirable to know the **questions** you are about to pose by heart. But still, have a list at hand and check it at the end. Start with questions that are simple, perhaps even banal for the interviewee, even if you know that you will never use them. The researcher will get used to the situation and give better answers to the questions you ask next.

Respond to the **answers**. If you are given a surprising statement, do not hesitate to ask additional questions until you are satisfied. If someone does not answer an important question, do not hesitate to repeat it.

It is useful to finish by asking the researcher whether there is anything else they would like to add that had not been mentioned by you.

Never let the person read from a paper! Reading gives terribly unnatural visuals. It is better if the answers are messy but natural than a presentation that looks like a political speech!

Let the researcher speak as well as he or she can. You can have them rephrase or summarise the parts you are particularly interested in. **Trust editing** – that's a wonderful help. Nevertheless, the worse the researcher's presentation, the busier you will be in the cutting room. Never forget to film enough footage to cover the cuts. The visuals should correspond with the subject of the interview.

Check that no undesirable **sound leaks in** (refrigerator, fan, centrifuge, building machines, jets, street traffic).

8.11.2 Technical aspects

When shooting the interview, try to have at least one other person with you – ideally they should be the cameraperson so you can focus on the interview while they handle the actual shooting.

Do not sit behind the camera or the interviewee will tend to look into the lens. Instead, sit (or stand) **close to the lens of the camera**, either to the left or right, whichever provides the best composition. In small rooms you might end up kneeling or squeezed between a table and a fridge – but it is important for the interviewee to feel comfortable, not you. Keep in mind that your best interview location might not be inside a room, but outside at a location that illustrates some part of the interviewee's life or work.

When lighting the interview location, stand in the interviewee's place. The cameraperson can freely make you move around until the position is right. Some researchers might not wish to be pushed around like that.

During the interview, the cameraperson can use slow close-ups to the person's face. When a question is being asked, the camera can retreat for a medium long shot, and during the answer, it can again move closer to get the detail of facial expressions.

NOTE: A frequent mistake is that the cameraperson focuses on the background, not on the person you are interviewing!

8.11.3 After shooting

Check your shots list and make sure that you really do have all the exteriors, all interiors, all working places, all procedures, all interviews, long shots, medium long shots, and close-ups.

Some researchers may want to know which shots and quotes you will be using. Listen to their concerns and explain once again what you are going to do and the requirements of your TV station. **You can offer to call him or her again and check facts and quotes while at the same time avoiding unnecessary discussions over your entire script and edits**. (These you should discuss with other journalists, as they are professionals in putting together the story.)

It might also help to ask the researcher to trust you, if you have established a link with him or her. Never forget that you are trading something – the researcher gives you information and his quotes, and you give him publicity and the possibility to talk to the public. Trust is needed on both sides.

It is a big debate among science journalists whether it is a good idea to let scientists read parts of manuscripts, their quotes, or even join you in the editing room. **Try to avoid this as much as possible**. It should only be agreed to under extreme conditions, such as an exclusive report on something that is technically very difficult to understand.

Be aware that by involving the scientist too much, you risk unconsciously shaping the report to please him or her rather than **your audience**. And if you include just one scientist in the final editing you risk being accused of partiality and unfairness if you have more than one source in your stories. You should avoid having interviewees participate in the final stages of your report 99 per cent of the time.

8.12 Postproduction

All the footage you have needs to be loaded into a computer and copied on carriers (VHS, DVD, harddrive) that can be comfortably viewed. Today, FTP servers are often used – the technician will load up all the daily work (B-roll) and you can download it to your home computer. The files will be poorer quality than for broadcasting, but for your needs it is sufficient.

To make a 10-minute report, you will often start with approximately two hours of B-roll and one hour of interviews. But this can vary a lot depending on the format and TV station you work for. Furthermore, you might also have photographs, graphics, and other collected material.

8.13 Script

This next phase can be terribly time-consuming and annoying – if you do not have an assistant – going through all the material (B-roll) and writing down the time codes of individual sequences to create the script. While doing so, you can take notes on the shots you are sure to use or sure to discard.

Type out all the important parts of your interviews, including all slips of the tongue and pauses. This will help you later during the cutting process, as it gives you an idea of how to reduce and shorten the interviews, and how to delete the undesirable sounds.

8.14 Get the most out of editing

Sitting in the editing room can be one of the most rewarding parts of your work, if you have prepared yourself well. Before we get into the details, here are some general considerations.

a. Strong starting material

The beginning and the ending shots are both very important. You want to "hook" the viewers into watching the piece, and you want to leave them with a strong impact at the end. Look for the most dramatic visuals for these parts of the piece. It's a good place to introduce the people you are profiling in the story, for example.

b. Use sequences to build the story

Sequences are a series of shots that show every step of an event. It isn't as satisfying to see only the end result of any scientific process or human activity – it's better to show the viewer each stage. Follow the visual sequences in your piece by writing copy to explain what the viewer is watching.

c. Let piece breathe with silence, natural sound and music

A TV report is more than just facts and figures – it should also be a good story. Use some dramatic visual story-telling techniques to make a strong impact. Music can be very effective in longer feature pieces especially, but use it sparingly and softly. Make sure the music matches the mood and feeling of your report – if it is not an upbeat story, then do not use happy music with it, and vice versa.

Natural sound is another important part of a good TV report. Some camera people have the bad habit of turning off the camera microphone when recording visuals. Do not let them – there is no good reason to do this, and you might miss something very useful. A skilful editor can include short "natural sound" breaks as part of your story. This gives the audience a much better sense of reality than just watching silent pictures with your voiceover.

But don't forget how effective silence can be – that is, the lack of sound from your voiceover, not a silent visual. After you've just explained an important fact, let it sink it a bit more by having a few seconds of silence with a good, appropriate visual before beginning the voiceover track again.

EXAMPLE:

This story about growing plants in space uses interesting visuals, natural sound, and makes good use of the location and scientists at work.

Plants successfully grown in space

[http://www.bbc.co.uk/news/science-environment-13852801]

8.15 Preparation for editing

Now this is another very demanding part of your job. From the many hours of footage you have, with disordered sequences and other material, you have to create a meaningful story before going into the cutting room.

The more material and the longer the report, the more important this preparatory phase is. You may find that you have too much or too little of something and will then have to make up for it using photographs, animation, and graphics.

Select the eligible "syncs" or parts of interviews. Indicate how these different portions of dialogues are to be connected, and which words are to be deleted. In general, it is usually better to present the facts briefly and clearly in the voiceover while using the syncs to show more personal feelings and opinions, or surprising statements.

At this stage, you should have an idea about the rhythm of your report – faster sequences, slower sequences, information-rich sequences, music-only sequences.

8.16 Editing

Many journalists are able to do their own editing. However, if you have a chance, working with an editor is an advantage because they are experts in both traditional and advanced methods of cutting, they are familiar with the software – and above all, they will be the first to view your report and can help you with any difficulties that may arise.

It is you who gives out the instructions and presents the overall idea, but still, the editor can encapsulate your idea in the right form.

For example, you might say: “At time code 10:05:07 to 10:20:15 (Tape DV 12345) we have a sequence with a pipette. I need to cut it into 15 seconds and I especially like the shot where the level of the sample in the tube is going down.” The editor should be able to do this, plus add his or her own recommendations. Their eyes are still eyes of a viewer, while you are already influenced by all the information and contexts you have acquired during shooting. You might even be surprised: you may think something is clearly explained by the visuals, but the editor may not see it at all. So be open to his or her opinions!

Today, cutting is mostly done on computers and there is a variety of software, which is being upgraded all the time. You do not need to know how to use this but you should know what it can do. On computers, you can add colours, change contours, add pop-ups with new visuals, insert text, slow down, speed up, make close-ups into still images, spin images, dye images – to name just the simplest and the most frequently used functions.

While editing, you may be sorry to find that some of the visuals you liked best will simply not work in the final edit. However, they need not be wasted – file them for another occasion. As with written journalism, don’t be afraid to **kill your darlings!**

8.17 Final sound editing

When you've finished basic editing, you are ready to finalise the sound.

1. Determine the exact time you have for every sequence and adjust the wording of the commentaries accordingly.
2. Choose which background noises will remain and what sounds you want to add.
3. Then pick the music, noting that you have to change it with every change of mood or environment. The music can precede the sequence or can gradually fade away.

8.18 Web resources

For further reading on TV science journalism, please consult the practical guide by the Science and Development Network SciDev.Net. [http://www.scidev.net/en/practical-guides/reporting-science-news-for-television.html]

For good tips on general TV reporting as well as science reporting, check Newslab

[http://www.newslab.org], an American TV news resource and training website. Click on the “resources,” “strategies”, “video” and “tools” entries for more details on specific TV reporting topics, including how to cover HIV/AIDS, bird flu and environmental issues. There is also a special section showing "before" and "after" scripts and videos to highlight common writing errors.

[http://newslab.org/resources/videos.htm]

The European Research Media Centre [www.youris.com] includes short science and technology teaser videos to get people interested in a topic. It also provides free, longer B-roll footage to TV producers and broadcasters. It may be possible to negotiate to use the footage for educational purposes, but a beta player and beta editing facility is required.

Euronews [www.euronews.net] is a European TV network that has a sci-tech section on its website, with sub-sections that included hi-tech, science and space.

The U.S.-based National Geographic Society [www.nationalgeographic.com] has online videos about animals, the environment and science and space as well as an excellent selection of DVDs for sale.

8.19 Self-teaching questions: Exercise 1

Please look at the following two story pitches. Answer the questions below. Afterward, have a look at Assignment 1

[http://www.wfsj.org/course/lesson.htm?e=e08#L08P40].

Pitch 1: From battlefields to our homes

A revolutionary substance, developed originally for neutralisation of poisonous gases, will now clean polluted air in our homes. Czech researchers were the first in the world to find a substance that can decontaminate military gases without causing harm to hi-tech electronics. Now, the substance will be used in the civilian sphere, for example as a component of paints on the interior and exterior walls of our houses. Our environment is filled with invisible harmful particles released by glue, rubber, carpets, lacquer and various emollients that can have a negative effect on us.

Thanks to a new technology called anatas modification of titanium dioxide (TiO2), researchers at the Institute of Inorganic Chemistry, Czech Academy of Sciences, in cooperation with the company Rokospol, have created a substance that triggers photocatalysis (a reaction that uses light to split organic substances), to significantly reduce the amount of harmful elements in the air (within 10 hours by approximately 10 per cent) and transform them into harmless water and carbon dioxide. Its use in future in multifunctional paints will not only enhance the durability of surfaces and beautify our walls – but also protect the air we breathe.

Pitch 2: Return of "strange" therapy

Viruses that eat bacteria can heal incurable diseases. Health experts around the world warn that bacteria are getting resistant to antibiotics. For example, Staphylococcus aureus (MRSA) has become a threat in many hospitals, causing incurable inflammatory diseases in weakened patients. Pharmaceutical companies are having trouble developing new antibiotics because the research and development is time-consuming and costly.

In Poland, an unusual treatment is being used – bacteriophages, or viruses that kill bacteria. Phages are the most numerous and widespread representatives of the living world on our planet. There are deadly phages literally for each type of bacteria, yet the phages are not dangerous to plants, animals or people. As early as 1896, Ernest Hankin observed that the water from the Indian river of Ganges prevented the spread of cholera. Later, Félix D'Hérelle explained that the reason was that the water contained a virus, which he called a "bacteriophage" or bacteria-eater. In the beginning of the 20th century the use of bacteriophages was extensive in the Soviet Union and also in the United States, and it seemed that the treatment had great prospects. However, when antibiotics were discovered, the phages fell into oblivion. Now they are set for a revival.

QUESTION 1:

What are the hooks of Pitch 1 and Pitch 2?

QUESTION 2:

What information is excessive in the two pitches?

QUESTION 3:

Can you think of additional sentences in these pitches that show that you have not only talked to one expert and that you can judge the scope of this topic?

QUESTION 4:

Make a list of the possible visuals you will need to collect in order to explain these stories to a viewer. Include all people, animals, activities, locations, archive footage, photographs, graphics and describe in detail what you hope and expect the viewer to see.

8.20 Answers to self-teaching questions: Exercise 1

QUESTION 1:

What are the hooks of Pitch 1 and Pitch 2?

Answer:

Pitch 1: A revolutionary substance, developed originally for neutralisation of poisonous gases, will now clean polluted air in our homes.

Pitch 2: Viruses that eat bacteria can heal incurable diseases.

QUESTION 2:

What information is excessive in the two pitches?

Answer:

Pitch 1: Probably the paragraph "Thanks to a complicated technology called anatas modification of titanium dioxide (TiO2), researchers at the Institute of Inorganic Chemistry, Czech Academy of Sciences, in cooperation with the company Rokospol, have created a substance that triggers photocatalysis (a reaction that uses light to split organic substances), to significantly reduce the amount of harmful elements in the air (within 10 hours by approximately 10 per cent) and transform them into harmless water and carbon dioxide." can be reduced to: "Thanks to a new technology, researchers at the Czech Academy of Sciences, in cooperation with the company Rokospol, have created a substance which significantly reduces the amount of harmful elements in the air and transforms them into harmless water and carbon dioxide."

Pitch 2: We can do without the historical context: "As early as 1896 Ernest Hankin observed that the water from the Indian river of Ganges prevents the spread of cholera. Later Félix D'Hérelle explained that the cause is a virus which he called a "bacteriophage" or bacteria-eater."

QUESTION 3:

Can you think of additional sentences in these pitches that show that you have not only talked to one expert and that you can judge the scope of this topic?

Answer: Many answers are possible, but here are two suggestions:

Pitch 1: "I would like to mention that the company involved is still testing the new materials. They would like to have a product on the market soon, and this seems to be realistic. I am also currently trying to find an expert who can tell me which kind of regulations and legal requirements a new product of this kind would need to meet."

Pitch 2: "Researchers in other countries are also pursuing this new research path. But the Polish are among the first to do a clinical study."

(Of course you can only write something here that you really have researched and understood. Never write a pitch that is too boastful. Editors are smart and may find out.)

QUESTION 4:

Make a list of the possible visuals you will need to collect in order to explain these stories to a viewer. Include all people, animals, activities, locations, archive footage, photographs, graphics and describe in detail what you hope and expect the viewer to see.

Answer:

Many answers are possible.

8.21 Self-teaching questions: Exercise 2

On the following pages you will find a draft treatment and also some preparatory lists for a 10-minute TV report on spiders. Try answering the questions that follow, and take a look at Assignment 2 [http://www.wfsj.org/course/lesson.htm?e=e08#L08P40].

Fascinating Spiders - Draft treatment

1. General introduction

Visual: Various spiders, details of spiders

Voiceover: Only a few types of animal stir up as much admiration and detestation at the same time.

Only a few phobias are as strong as arachnophobia. Let's try to transform the fear of spiders into respect towards this unique phase of evolution.

Visual: Pallas Athena turns Arachne into a spider

Voiceover: Spiders are a subject of many myths and legends. Even the name of the science about spiders originated in an ancient Greek legend. Arachne was so proud of her weaving skills that she challenged the goddess of sciences and arts to a contest. However, the image Arachne wove was not good enough for Pallas Athena, and Arachne was turned into a spider.

2. Introduction of a facility where spiders are studied

Visual: Exterior of the Faculty of Natural Sciences, J. E. Purkyně University, Ústí nad Labem, interior of the laboratory of the Dept. of Biology, Dr. J. H. in the lab explains basic facts about spiders: they came into being more than 350 million years ago; today, there are over 36,000 species and billions of individuals; each year, some 200 new species appear.

3. Characteristics of spiders

Visual: Details of spider body parts

Voiceover: Spiders usually have eight eyes; their body consists of a fused head and thorax, called prosoma, and an abdomen. By the mouth, the so-called chelicerae hide outlets of poison glands. Unlike insects, spiders have eight legs. They are predators and actively hunt for prey. Three typical traits characterize spiders: poisonous glands, external digestion, and a rare method of production and use of silk.

Visual: Spider hunting and killing a mouse, detail of fangs, impassive prey

Voiceover: Since the spider's throat is too narrow and does not allow for swallowing of larger objects, digestion of food takes place outside spiders' bodies. The prey is numbed or killed by poison, which is produced by special glands at the base of massive fangs. Dead prey is then infused with digestive juices and left alone for a few minutes or hours until the inside tissues liquefy and can be sucked through a tiny hole in the prey's body.

4. Harm caused by spiders

Visual: Photographs of poisonous spiders and wounds they have caused to humans and animals.

Voiceover: Almost all spiders can produce poison. However, a danger to people is presented only by some trap-door spiders, the black widow, or spiders of the orders of Loxosceles and Atrax, because these, unlike the rest, are able to bite through human skin. For example, the black widow injects four milligrams of toxin, which kills the lab mouse within 20 minutes, the guinea pig within six and a half hours, and the cat within five days. In large mammals, such as horses or camels, fatalities related to spider bites are only rarely observed. Extreme resistance to spider bites is shown in sheep and goats.

5. How the spider contributes

Visual: Archive – patient suffering from epilepsy

Voiceover: Spider poison can actually be useful to man. Pharmaceutical companies buy poison of trap-door spiders, which allegedly serves as raw material for a prospective drug against epilepsy.

6. Characteristics of spider fibre

Visual: Beautiful spider webs

Dr. Hajer explains that the most characteristic trait of spiders is the spinning apparatus and its product – the web. Chemically, it resembles silk, which is produced by the silkworm, but spider fibres are much more sophisticated.

6a. Dissection of spider – spinnerets

Visual: Dissection of spider, detail of the spinning apparatus

Voiceover: The spinning apparatus consists of three to four pairs of spinnerets attached to the large abdomen. The main difference between spider fibre and other fibres is not its firmness but the degree to which it can be extended without breaking. Spider fibre can by extended by up to 30 per cent, while, say, the fibres of human ligaments can only be extended by 10 per cent.

6b. Weighing spiders and webs, various use of spider fibre

Visual: Weighing of spiders, their cocoons and webs

Voiceover: Spiders use their spinnerets for four purposes. First, they produce material for silk pods called cocoons in which eggs develop. Secondly, they produce fibre for shelter. Also, they produce fibre for the construction and repair of traps used for hunting prey. And lastly, they produce drag ropes. Dr. Hajer explains that the biggest spiders, individuals of 75 micrograms, create webs of 126 micrograms. Such a web, often two metres in size, will hold even smaller birds!

6c. Fibres under a microscope

Visual: Laboratory of Atomic Force Microscopy, laboratory plate with a sample of fibre, placing of the sample under the microscope, watching the sample on a monitor.

Voiceover: An atomic force microscope, with high definition of several nanometers, provides three-dimensional images of biological samples. This way, we can acquire information about mechanical, electric, and magnetic properties of fibres. Research in the United States has shown that the fibre used in European garden spider webs are, measured by weight unit, stronger than steel and comparable to the super-strong polymer material called Kevlar.

Visual: Microshots of web fibres

Voiceover: Web fibres have to hold a flying insect and absorb its kinetic energy. Construction of the orb-web distributes the energy from the spot where the flying insect hits the web to all over the web's surface. Kinetic energy is transformed into heat, so it does not create a backlash, which would otherwise catapult the insect off the web.

7. Observing spiders

Visual: Greenhouse – exterior, interior, opuntia covered in fibres

Voiceover: To identify the best fibres for research, scientists also need to study spiders from the viewpoint of ethology – to find out how spiders actually use their fibres.

Visual: The common house spider separates the mealybug, covers it in fibre and sucks

Voiceover: Here, the common house spider was informed through fibre vibration in its web that there is the mealybug in it, and it is trying to separate the mealybug from the plant. The insect is catapulted by flexible fibres into the web, where the spider covers it with silk, fills it with digestive enzymes and sucks. This know-how could benefit man.

Dr. Hajer explains what he mostly deals with: small spiders who live under extreme conditions, for which he has developed a special research method to study miniaturization of all organs necessary for the spider's existence.

8. Specifics of spider reproduction

Visual: Reproduction of species Argyrodes – details of chelicerae, cocoons, male, and female

Voiceover: Spiders have a unique way of reproduction. Species Argyrodes ranks among kleptoparasites: its individuals inhabit the periphery of European garden spider webs and steal their prey. When copulating, the male releases a kind of love potion from a protuberance on the thorax, part of his prosoma, to inhibit the aggressiveness of the female.

Visual: Reproduction of Theridiosoma – the female drags the male closer on a dragrope Voiceover: Males of the species Theridiosoma face a sad fate. Copulations of several seconds repeat for forty to fifty minutes. During the pauses, the male wants to leave the female but she holds his drag rope and pulls him back to her side. At the same time, she unwinds silk from the male's spinnerets and eats it to provide herself with sufficient proteins. The male, consequently, dies of exhaustion.

9. Spiders as pets

Visual: Aquaria with spiders, details of beautiful, big, hairy spiders

Voiceover: Spiders do not have a good reputation – perhaps due to their method of reproduction, number of legs, hairy bodies or predaciousness. However, they cannot be denied their extreme resourcefulness and effective defensive and offensive mechanisms. That's why they are still often kept at homes as lovable pets.

Spiders – Preparation Lists

Location: Faculty of Natural Sciences, J. E. Purkyně University, Ústí nad Labem, Dept. of Biology and Laboratory of Force Atomic Microscopy (address)

Scientist: Dr. J.H. (phone, e-mail, address)

To shoot at the Faculty:

1. As many different spiders as possible, including cocoons, webs, young spiders
2. Hungry trap-door spiders in aquariums, to make sure they hungrily swoop the prey
3. Preparation treatment of spider spinnerets
4. Weighing of spiders, measuring of webs
5. Laboratory of Atomic Force Microscopy
6. Exteriors of buildings, interiors of laboratories

List of footage to acquire from scientists:

1. Macroshots of mandibles
2. Spiders: trap-door spiders, black widows, Loxosceles, Atrax
3. Drops of poison
4. Spider weaving a web
5. Macro of the spinning apparatus – spinnerets, outlets, extremities
6. Cocoons, spider mother tearing the wall of a pod, young ones coming out
7. Spider weaving a drag rope, swinging on it, eating it
8. Macroshot of a fibre, cross-section of a fibre
9. Behaviour of spiders Argyrodes
10. Web with a female spider and young ones

List of footage from the archive:

1. Patient suffering from epilepsy, electroencephalograph (EEG)
2. Picture of Arachné and Pallas Athena

Questions for Dr. J.H.:

1. What is it about spiders that fascinates you most?
2. When did spiders appear, how many are there, what are their main characteristics?
3. What unusual and unique facts about spiders were discovered at your research centre?
4. How much does the spider weigh, how large are the webs, how firm are the fibres?
5. How many types of spider fibre do we know – what are the differences?

QUESTION 1:

How many institutions does the crew have to visit?

a. 1 institution
b. 2 institutions
c. 3 institutions

QUESTION 2:

Which of the following things does the scientist have to do to prepare for the shooting?

a. Look over the suitable video footage he made during scientific observations and choose the suitable parts.
b. Make arrangements in laboratories where the shooting will take place.
c. Request approval from the institution's management for the shooting.

QUESTION 3:

Is the journalist going to use a majority of footage made at the site by himself, or a majority of footage handed over by the scientist?

a. The majority of material will come from the scientist.
b. The majority of material will be produced by the TV crew

8.22 Answers to self-teaching questions: Exercise 2

QUESTION 1:

How many institutions does the crew have to visit?

Answer:

a. 1 institution

The crew is going to shoot at one institution (Faculty of Sciences, J.E. Purkyne´s University, Ústí nad Labem, CZ), but within this institution they will be shooting at several places: scientist's office (interview), lab with scales for weighing spiders, lab for spider dissections, lab with special microscope, glass house, and room with terrariums with various spiders.

QUESTION 2:

Which of the following things does the scientist have to do to prepare for the shooting?

a. Look over the suitable video footage he has made during scientific observations and choose the suitable parts.
b. Make arrangements in laboratories where the shooting will take place.
c. Request approval from the institution's management for the shooting.

Answer:

a, b, and c.

In fact, the scientist has a great load of work to do for you:

- He has to ask his director or the press person of the institute for permission to shoot on the premises of the institute; you may have to provide a request acknowledged by your TV station.
- He has to choose suitable video footage from the whole bunch he made for his scientific purposes – and you have to sort through the chosen footage as well.
- He has to find a very hungry big female spider and prey for her – a white mouse in this case.
- He has to ask his student to perform the dissection of spider, and he has to ask the technician to demonstrate how the spider fibre is explored by means of the special atomic force microscope.

A few days before the actual shooting you have to check that everything is arranged.

QUESTION 3:

Is the journalist going to use a majority of footage made at the site by himself, or a majority of footage handed over by the scientist?

Answer:

b. The majority of the material will be produced by the TV crew.

The journalist has to use a majority of his or her own footage and picks up only the best bits from the bunch the scientist puts forth. Shots made by the scientist are usually done for another purpose and are usually too lengthy. These shots are also of poor technical quality, with the result that they may have to be made smaller and put into a frame size of one quarter of the TV screen. But the features may be so unique that this fact outweighs their impaired visual qualities.

8.23 Self-teaching questions: Exercise 3

For your story, you need to shoot 20 seconds sequence of a scientist working with a microscope. Make a list of 5 shots you have to take.

8.24 Answer to self-teaching questions: Exercise 3

QUESTION:

For your story, you need to shoot 20 seconds sequence of a scientist working with a microscope. Make a list of 5 shots you have to take.

Answer:

You need a combination of long shots, medium long shots, medium shots, close ups and even micrographs. These shots have to be taken from different angles.

1. Long shot – the whole laboratory or the workplace of the scientist
2. Medium long shot – scientist at the desk with microscope reaching for samples, scientist starting to look into the ocular
3. Medium shot – hand taking the sample, hand placing sample under microscope
4. Close up – sample on the glass, hand adjusting the boss of the microscope, eyes of the scientist getting close to the ocular
5. Micrograph – of the sample

8.25 Self-teaching questions: Exercise 4

An interviewee at the last moment decides he has only 10 minutes to talk and no time to let you into his lab. Below are five possible reactions. In what situations are each of these reactions a good choice?

1. Explain why it is important for the scientist to cooperate with the journalist, why the scientist needs TV publicity. Evoke the interest of scientist – millions of viewers might see him. On the other hand, induce his concern that he will be ignored next time if he does not dedicate time and effort to explain everything to you.
2. Arrange a new date and time for the shoot.
3. Make a quick interview. Ask the most important question first and try to extend this interview as much as possible.
4. After making a short interview, try to point out why it would be good to let the crew into the lab.
5. Skip the shooting entirely and don´t cooperate with this scientist anymore.

8.26 Answers to self-teaching questions: Exercise 4

An interviewee at the last moment decides he has only 10 minutes to talk and no time to let you into his lab. Below are five possible reactions. In what situations are each of these reactions a good choice?

1. Explain why it is important for the scientist to cooperate with the journalist and why the scientist needs TV publicity. Evoke the interest of scientist – millions of viewers might see him. On the other hand, point out that he will be ignored next time if he does not dedicate time and effort to explain everything to you. **Answer:** This answer is right when you see that scientist doesn't insist firmly and can be persuaded.
2. Arrange a new date and time for the shoot.
   Answer: This answer is right in the case that the institute with the aforementioned lab is situated near you, and arranging a new interview doesn't demand more extraordinary organisational efforts and financial costs.
3. Make a quick interview. Ask the most important question first and try to extend this interview as much as possible.
   Answer: This answer is right if you really want to have at least something with this particular scientist, and you have already shots of similar labs, which you can use as an illustration. You can also ask him to send you some pictures by e-mail.
4. After making a short interview, try to point out why it would be good to let the crew into the lab.
   Answer: This answer is right – you have done something already and maybe the scientist changed his mind in the meantime. You have nothing to lose.)
5. Skip the shooting entirely and don't cooperate with this scientist anymore.
   Answer: This answer is right in case you want to make an elaborate documentary, and this scientist isn't the only one with whom you can film the subject.

8.27 Assignments

ASSIGNMENT 1: Please look again at the two pitches in Section 8.19. [http://www.wfsj.org/course/lesson.htm?e=e08#L08P32] You can get back to the current page by pressing the "back" button on your web browser. Discuss the following questions with your tutor.

1. Can you think of another hook?
2. Can these pitches be re-written more concisely? Do they arouse curiosity and an urge to know more about the topic?
3. Are the pitches clear and understandable? Could they be misunderstood?
4. Try to put yourself in the place of the commissioning editor. Are these subjects relevant to your audience? Would you choose them for your TV station? Why or why not?
5. Can you describe the kinds of compelling visuals and remarkable people that you hope to get to illustrate your story, and also explain the access that you need and think you can get in order to do this?
6. Now get back to the place of pitching journalist – what would you change to enhance the chance that these stories will be accepted?
7. Write you own pitch and review it with your tutor.

ASSIGNMENT 2: Take another look at Section 8.21 [http://www.wfsj.org/course/lesson.htm?e=e08#L08P32]. Then write your own treatment for a story on an animal in your country that many people know, but that most people do not know really well.

After that, please check that you have:

1. The basic idea of the story, all facts gathered.
2. A list of all the locations where you want to shoot.
3. A list of all the shots you want to take.
4. A list of all the experts you want to talk to and list of questions you want to ask.

Discuss this with your tutor.

ASSIGNMENT 3: Here is a list of things that can go wrong during a shoot:

1. Camera fails to work.
2. Camera works but some of the shots are blurred or otherwise destroyed.
3. Sound is not recorded at all.
4. Sound is recorded but at some places strange cracking noises appear.
5. You have only about half of footage you originally planned.
6. You forgot to take lights.
7. You forgot to take a tripod.
8. You forgot to take a microphone.

Add to this list and think over possible solutions. Discuss with your tutor and colleagues technical problems you have experienced in the past.

ASSIGNMENT 4: Editing in the camera

Prepare a 30-second piece on a new discovery. Imagine that you don't have access to editing room.

Then you can use a method known as "**editing in camera**," which doesn't actually involve editing. Instead, each section is filmed in sequence and is not changed once it is complete, resulting in a finished piece once the last section has been filmed.

This method is sometimes used for news broadcasts, but it requires quite an experienced cameraperson who already has some skill with editing. It also requires careful planning in advance. You have to know the length of the final contribution and the exact length of sequences corresponding to individual sentences. And you need to know your final shot in advance.

Once you have discussed all this with you team you can start shooting. Begin with a long shot and continue with a variation of medium long shots and close-ups, as well as a short opinion from the scientist.

ASSIGNMENT 5:

You want to film a school class in Africa that uses laptops for the first time. You have one hour to shoot in the classroom. What are the shots you are going to take here? Please discuss this with your tutor. Please also bear in mind the ethical side of this assignment. Although children may encounter a computer for the first time and may make basic mistakes, the feature cannot depict them as foolish.

ASSIGNMENT 6:

Cooking is an activity everybody knows. It is also very close to what happens in some laboratories. Therefore, it can serve as an excellent training subject.

1. Write a pitch in 150 words on preparing some kind of exciting speciality.
2. Write a draft treatment, emphasising the scientific point of view. Some possible scientific aspects include:
    a. Hygiene
    b. Changes of molecular structure in the course of processing food
    c. Facts on nutrition
3. Shoot a family member showing:
    a. Preparation (shopping, getting water, marketplace, slaughtering animal)
    b. Raw food processing (washing, chopping)
    c. Cooking (boiling, baking).
    d. For added value, show local habits in your country.
4. Choose editing software suitable for you (see http://en.wikipedia.org/wiki/List_of_video_editing_software and http://en.wikipedia.org/wiki/Comparison_of_video_editing_software) and create you own story.
5. Show the story to others and be open to critiques.