

Extensive crowdsourced dataset of in-situ evaluated binaural soundscapes of private dwellings containing subjective sound-related and situational ratings along with person factors to study time-varying influences on sound perception -- research data

Help Texts - English Translations

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Questions about the process and technical questions

[This text was made available as a PDF document prior to the study and in the survey app during the study.]

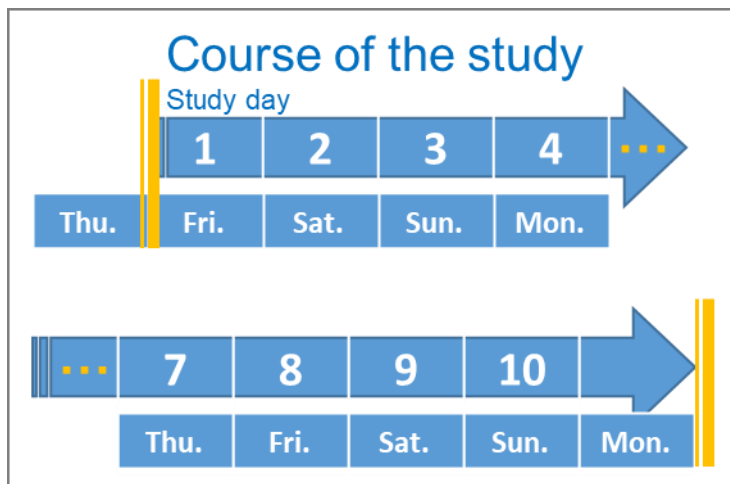
When does the study start and how long does it last?

After your introduction date (Thu./Fri.) at the university, you have registered the study smartphone in the home WLAN and started the study in the app. - If the smartphone is not in the WLAN, please contact the study management.

The study starts on Fri, the first day of the study. From then on, you will be prompted to evaluate your sound environment during the time periods you set (see help on alarms).

The study ends on Monday after the tenth study day.

On Return Monday, you can continue to provide reviews and audio recordings.



What is the procedure for returning technical equipment?

The return of the equipment can be done by mail, in person or by courier. This will be arranged individually. For questions or possible changes, you can contact us via the message button.

How do I set up the WLAN?

At home, first set up the WLAN in the study smartphone. Once the study is running, this is no longer possible. The study app movisensXS blocks all other apps, including the WLAN settings menus of Android. If you have problems with the WLAN settings, we therefore ask you to contact us. We will then help you with the new setup.

How do I set the period of notifications?

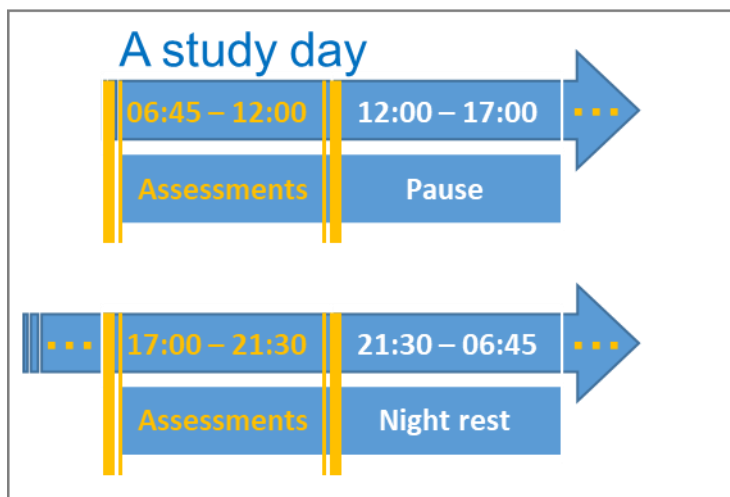
The time period for the daily notifications (alarms) for the recording and evaluation of your sound environment is set to 7 am to 11 pm by default but can be customized. Use this setting to deliberately schedule time periods for the assessments and break or absence times. Set a time period when you are at home and have time to make recordings. If you have set a time period, notifications will occur for the first time approximately 15 minutes after the start of the time period and every hour thereafter. Please turn the phone up during this period.

For your ratings to serve the study, there must be an average of at least five recordings per day over the ten days. Ideally, you will rate a total of 70 or more sound recordings, i.e., seven each day (this results in the maximum possible allowance). By doing so, you will bring the study to a better result and also increase your allowance.

In order to accommodate the number of recordings you want in the set time period, you must note that the first alarm will ring already 15 minutes after the start of the time period.

Ex: You are at home at 6 p.m., would like to be reminded every hour between 7 and 9 p.m. for recordings and set exactly this period. The first alarm then occurs at 7:15 p.m., the second after one hour at 8:15 p.m. Since you have deactivated notifications from 9 p.m., no further alarm occurs after 8:15 p.m. in this example. So, you will only be alerted twice in total. To make the best possible use of the time period available to you, you can therefore either start the period earlier, e.g., at 18:45, or extend it to 22:15, for example, or start recordings on your own initiative. For self-initiated recordings, however, note that they should only be made when you hear something in your environment, and also not immediately before or after another recording.

If you do not use the option of self-initiated reports or use them infrequently, you may not achieve your daily workload of up to seven exposures within the period described above. In that case, schedule additional periods during the day. A possible daily schedule could look as follows:



In this example, you set the period 06:45-12:00 the evening before. You will then be asked to evaluate for the first time at around 7:00. You take a lunch break and will go shopping afterwards. You know you will be home from 5pm. Therefore, set the new time period before the lunch break (e.g., 17:00-21:30). Of course, you can do the same when you get back home after shopping. - In this way, you can control the notifications in the way that is best for you.

If you do not have time to record and evaluate a notification (alarm) despite having set up a suitable time period, you can postpone the notification or reject it altogether, just as with the normal alarm clock. If you have postponed the notification, it will occur a second time after five minutes and then cannot be postponed again, but only accepted or rejected. If you reject a notification, you will receive the next notification after about an hour if it is still within the set time period. Press "accept" if you can conscientiously perform survey and sound recording.

How do I make a sound recording?

To be able to start recording immediately at the time of the alarm (notification), you should always have the recording device and cell phone together in the bag provided. You can simply hang or strap it around you for the set alarm period and use it to move freely around your home so as not to miss any alarms.

If you are prompted to record, first ask yourself: Do you hear anything? - Pause for a moment to do this (the survey will prompt you to do just that when you have accepted the notification and started the survey).

Do you hear anything? If so, take the recording device and microphones out of your pocket and connect the microphone to the sound recording device if necessary. Make sure that the device is at least two steps away from other cell phones or radios and other electronic devices, otherwise noise may occur. Switch on the recording device at the black switch. The lamp on the transparent top of the device should now turn green. - If it turns yellow, the batteries are running low. You can still continue to record sound by acknowledging the battery warning by pressing the red button. - Please inform the study management to replace the batteries if necessary. Since something could break in the process, you should not open the device yourself.

Put the microphones in your ears like ordinary headphones. Which mic is on the left or right doesn't matter. The plugs do not have rubber plugs so that you can listen yourself while recording. Therefore, the plugs may not be completely tight in the ear. It is only important that the plugs do not fall out of your ear cups during the recording in progress.

To start the recording, press the red button. The lamp now lights up red for four seconds. Please take slow, deep breath and then do not move. When the light then flashes red, the recording runs for 15 seconds. It is best to hold your breath and stop moving during the recording. In order to record your surroundings as well as possible, no sound should be made by you (e.g., no swallowing sounds, no rustling of clothing). Also make sure that the headphone cable does not move and does not hit anywhere. If the recording is completed successfully, the lamp will glow green again and you can move again - and breathe, of course. If, on the other hand, the lamp shines purple, the sounds were too loud or something got to the microphones (e.g., hair, wind). Please repeat the recording, if possible, by deleting it first (press and hold the red button for two seconds) and then restart the recording process.

Please be sure to switch off the device at the black switch after sound recording so that the batteries do not run down prematurely.

Attention: Please never switch off the device during a recording (lamp flashes red), but only when the lamp is green or purple (if you could not make a new recording)!

Overview: The lamp

- No lamp: malfunction. Please contact study management.
- Yellow lamp after switching on: Battery is low. Acknowledge by pressing the red button, continue to participate in the study and inform the study management.
- Lamp lights up green: Device is (possibly again) ready for recording
- Lamp lights up red for four seconds: Prepare for recording, inhale.
- Lamp flashes red 15 times: Recording runs for 15 seconds.

- Lamp flashes or lights up purple: Sounds are (were) too loud. Please repeat recording; first delete.

How can I delete a recording?

To cancel the current recording or delete the last completed recording, press the red button for 2 seconds until the light flashes yellow quickly. Note: You can only delete the last recording and only if the device has not been switched off in between. If there is nevertheless content on a recording that cannot be deleted and that should not be used for the study, tell us the date and time of this recording by e-mail to

...@hs-duesseldorf.de or by message button.

How do I deal with distractions?

Since the quality of the ratings decreases due to distractions and the whole rating becomes useless if the ongoing survey was stopped due to inactivity, please stay focused until the end of each assessment. If this is ever not possible, you can start an assessment on your own at a later more suitable time. Also, you should rather reject an alarm and start an assessment on your own initiative later, if you suspect that you will not be able to answer the questions in a concentrated way at that particular moment.

During sound recording:

If you are disturbed or otherwise distracted during a recording so that the recording is not usable for the survey, please delete the recording as already indicated. If you make up for the recording within five minutes, you can pick up the current survey again and continue. If you are only able to record again later, please start a new survey on your own initiative at the next possible time.

During the evaluation:

If you have not made any more entries for one minute, you will be reminded by alarm for 20 seconds. After that, the survey will end automatically. At the next opportunity, start a survey on your own initiative or let the notification prompt you to do so (within the time period you have set).

You can easily contact the study management via the message button in the study app. You can also send us an email at ...@hs-duesseldorf.de. You can reach dietudienleitung by phone at +49 211 4351 Feel free to come to us with any problems, suggestions, and open questions!

Notes on the response

To which point in time do the questions on sound perception refer?

The questions refer to the specific timespan in which you recorded your noise environment.

Starting a recording on your own only makes sense if you hear something. These sounds must then absolutely be present on the recording so that you can refer to them in the survey.

What does "degree of activation" mean?

The level of activation asks about your mental, emotional, and physiological state at the time of the survey. For example, if you are particularly happy and excited or if you feel very stressed, you indicate a high level of activation. Both situations then differ in mood, which you rate separately. You indicate a low level of activation, for example, when you are sitting relaxed on the sofa and comfortably reading a book.

What is the "most salient sound"?

The sound that attracts your most attention is the most salient sound.

Ex: You hear a soft clock ticking and voices in your environment. Your concentration is repeatedly drawn to the ticking of the clock. It is therefore most salient to you and is therefore your most salient sound to which your answers refer.

How do I assign sounds to categories?

1. Nature: animals, weather, and other nature sounds

E.g.

- Birdsong
- Rain (which you can hear pattering on the window, for example)
- Thunderstorm
- Wind, if it can be heard by itself or also if it causes sound (e.g., by moving objects, rattling)
- All sounds from pets

2. People: Housework, footsteps, moving chairs and furniture, and other sounds made by humans, except voice/speech

E.g.

- Sounds during housework (rumbling, clattering, clanking)
- Snoring and cough
- Sound when using cutlery and dishes

3. Household: sounds of all common appliances and tools

E.g.

- Refrigerator sounds
- Washing machines (e.g., spin, rinse, but no beeps)
- Vacuum cleaner, hair dryer
- Kitchen appliances such as blenders, coffee makers, toasters
- Fans
- Clock ticking (but no alarm tones)
- Drilling or hammering
- Tail trimmer, leaf blower

Devices such as televisions and radios are counted in other categories depending on their use (see points 7 and 8 further on)

4. House installation and house supply

E.g.

- Heating, therme, heat pump
- Air conditioner, ventilation
- Water pipes (supply and wastewater from, e.g., shower)
- Current whine, hum

5. Signal, warning, and indication tones

E.g.

- Alarm ringing/alarm tones
- Egg timer ringing
- ready washing machine that beeps
- Cell phone or laptop that emits beeps (no music or speech)
- the child's toy that makes sounds (not music or speech)

6. Traffic, construction, and industry

E.g.

- Sounds of the construction site outside (e.g., jackhammer, falling objects)
- passing cars, streetcars or trains
- Aircraft sound
- Garbage truck

7. Speech

E.g.

- Speech from the TV or the radio
- Speech from a child's toy or cell phone
- talking neighbors
- screaming and laughing children from playground
- Foreign languages

Sounds like coughing or sneezing do not belong to this category! They belong to the category "People". Laughter, however, is counted as "Speech", since it usually occurs together with speech.

8. Music and singing

E.g.

- Music from the TV, radio, smartphone, children's toys
- Making music and singing
- All music styles
- Chanting

How do I describe everyday sound environments?

The sound environment can also be considered as a "sound composition". It consists of many different sounds, similar to how a musical composition consists of different instruments. These different sounds can be assigned to categories, and several sounds can belong to a common category.

Once you have made this categorization, put the sound categories in proportion and rate them according to your intuition: How salient are each sound category on a scale of 0 to 10?

Three examples from everyday life follow.

Example 1:

You hear hammering, road traffic, voices and a humming. The hammering appears to come from a construction site outside, so it could be assigned to the category "Traffic, construction work, industry", as could the road traffic. The voices can be placed in the "Speech" category. The humming comes from the refrigerator, so it can be attached to the category "Appliances and tools from the household".

Now the only thing missing is the rating of the salience, the conspicuousness of the categories on the scale from 0 to 10.

Example 2:

You hear a music program from your TV, your dog chewing on a bone, and your child playing with a child's toy that keeps making sounds and speaking a voice in between. Your child is laughing while playing. Music from your TV is categorized as "Music and singing". Your chewing dog belongs to the category "Nature: animals, weather and other nature sounds". Since you hear both sounds and speech from your children's toys, here's the question: which of these is most noticeable, most salient to you? If these are the sounds, put them in the "Signaling, warning, and notification tones" category. Your child's laughter should be assigned to "Speech" because speech and laughter usually occur together and are thus counted in one category. This assignment is also made if your child cannot yet speak.

Now the only thing missing is the rating of the salience, the conspicuousness of the categories on the scale from 0 to 10.

Example 3:

You hear a soft clock ticking, a muffled telephone call in the next room and the construction site outside the front door with excavators and construction workers shouting to each other. The clock ticking can be counted to the category "Devices and tools from the household". If the clock were to emit a signal tone (e.g., cuckoo clock or alarm clock ringing), it would only be classified in "Signaling, warning, and notification tones" if the ticking falls into the background in the process. The telephone call belongs in "Speech". The sounds of the excavators belong to "Traffic, construction, industry", but the shouting construction workers belong to "Speech".

Now the only thing missing is the rating of the salience, the conspicuousness of the categories on the scale from 0 to 10.

How do I judge the loudness of a sound or sound environment?

The evaluation of the loudness is done in two steps. First, a coarse loudness level is selected (e.g., "very quiet"). Next, this level is subdivided even more finely (1 to 10). The fine graduation 10 is always at the limit to the next loudest loudness level, the fine graduation 1 is at the lower limit to the quieter loudness level.

This principle applies both to the evaluation of a single sound, the most salient sound, and to the loudness of an entire sound environment.

Trust your intuition: It is about how the sound is heard by you, not how loud the sound source is. For example, an airplane is known to produce a very loud sound, which may be heard only softly at a great distance from you and should therefore also be indicated as "low-level".