

Right Arm and Hand

part

Bow hand

Thumb counter-pressure

1

Counter-pressure is sometimes very little, and at other times much more, depending on the amount of pressure into the string, and which part of the bow is used. At the heel the thumb's contact with the bow can be very light, even in the loudest playing. At the point, the thumb has to work hard against the downward pressure of the fingers into the bow. However much it is, counter-pressure should always be as little as possible.

Counter-pressure is automatic and unconscious, but conscious releasing can be helpful. The most common thumb tension problems do not come from counter-pressing, but from not letting the thumb release when less counter-pressure is needed.

Place the thumb at an angle of about 45° to the bow, so that the tip of the left side of the thumb (as seen from the player's viewpoint) is on the stick and the right side is against the nut. The thumb should always bend outwards.

This exercise shows how much counter-pressure the thumb has to give in every part of the bow.



Light and relaxed thumb despite the pressure into the string



At the point the thumb counter-presses more

Fig. 1

- 1 Place the bow on the string at the heel, just in front of the first finger, holding the bow with only the thumb and first finger (Fig. 1a).
- 2 Slowly push the wood of the bow down as far as possible. However hard you press into the string, the thumb can be light and relaxed.
- 3 Replace the bow on the string a centimetre higher up. Slowly press the wood of the bow down as far as possible. Feel how the thumb has to counter-press a fraction more.
- 4 Continuing to hold the bow with only the thumb and first finger, press the bow down into the string centimetre by centimetre up the whole length of the bow. Feel all the different degrees of counter-pressure the thumb has to give. Pressing at the point creates the most counter-pressure (Fig. 1b).
- 5 Using a normal bow hold, press down into the string in every part of the bow, feeling all the different degrees of thumb counter-pressure.

The thumb and second finger

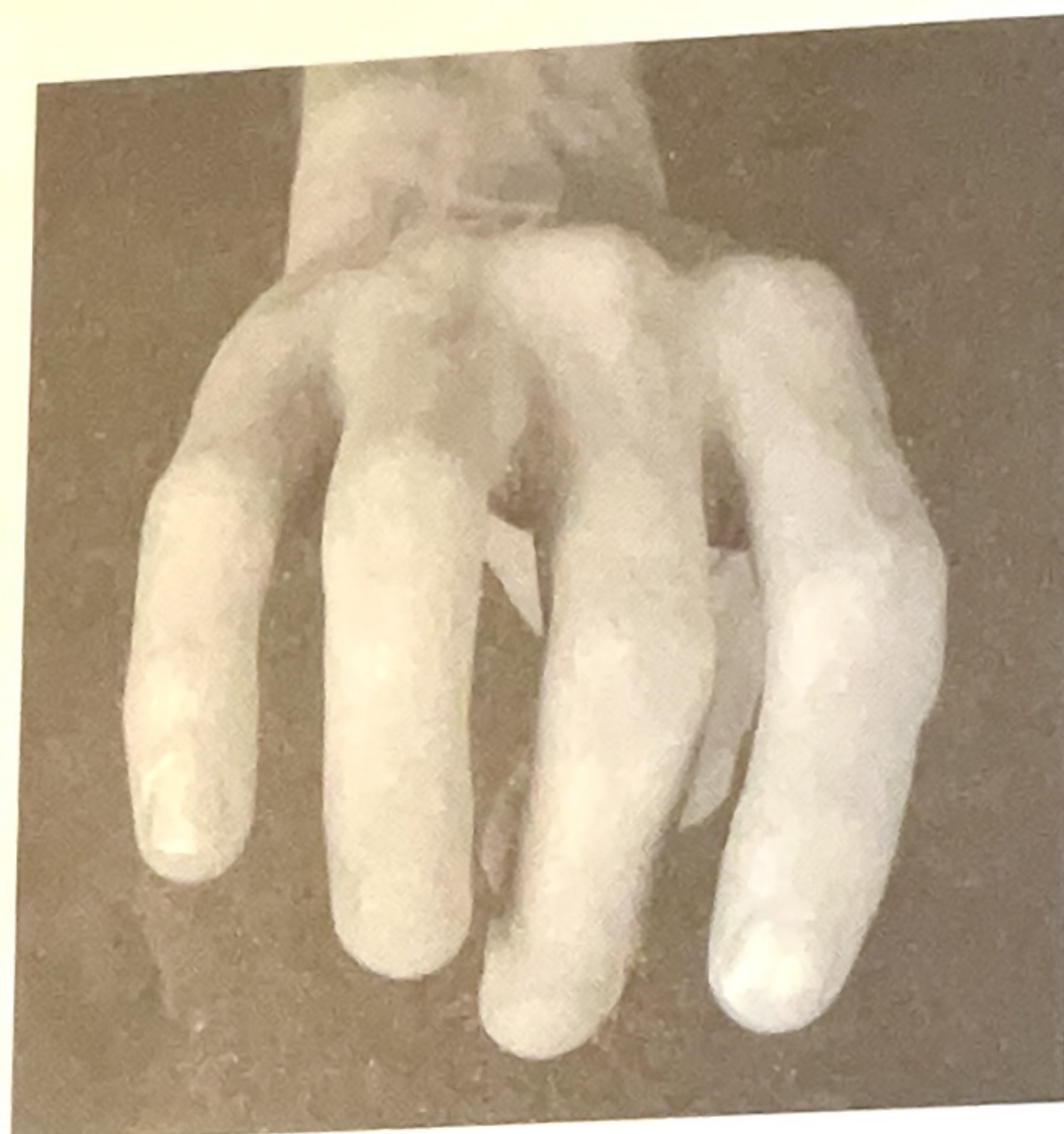
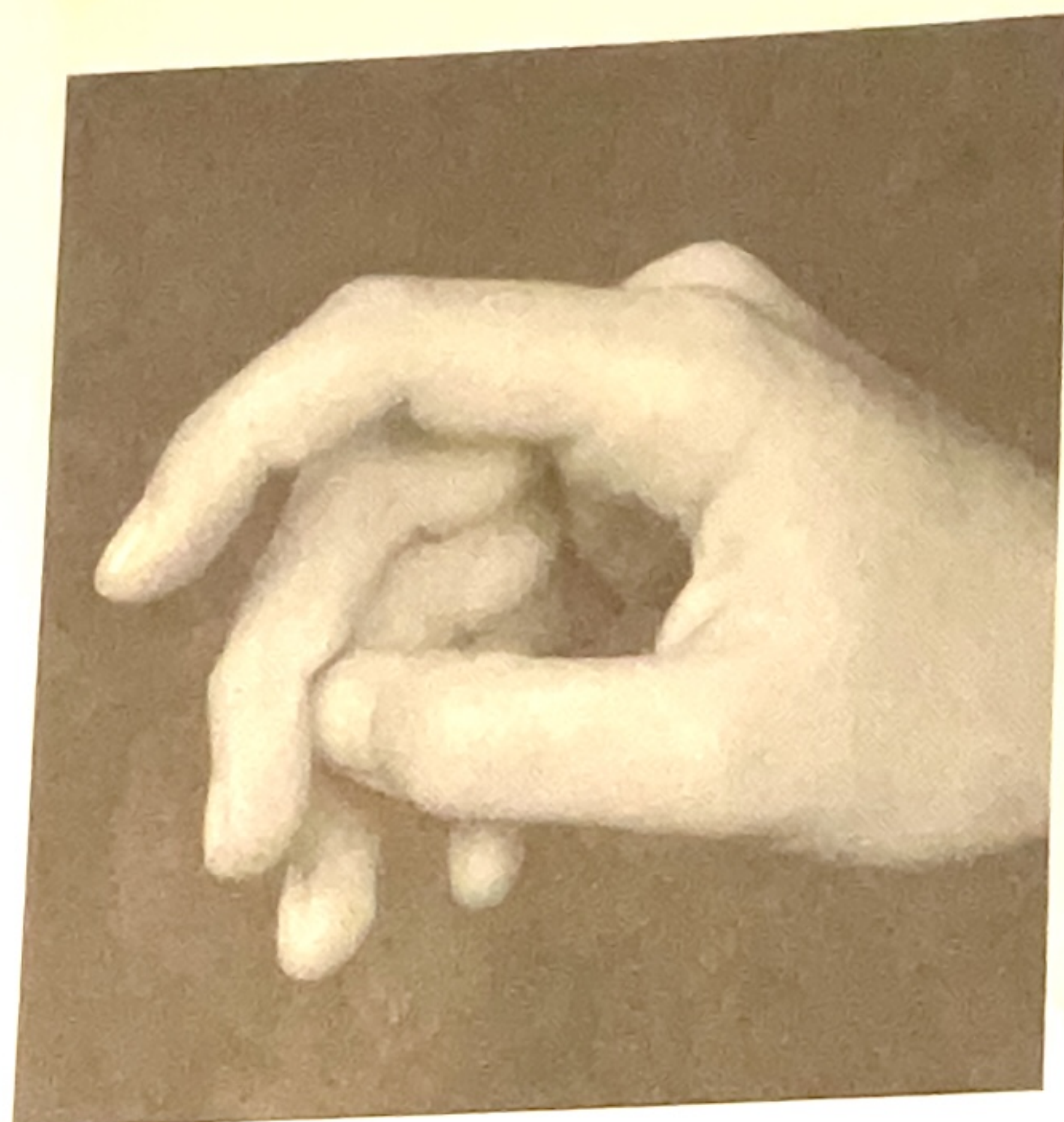
See also *About the movement of the bow within the hand*, page 72.

The thumb and second finger are the centre of the bow hold. The second finger needs to sit very slightly to the left of the thumb (as seen from the player's viewpoint; Fig. 2).

A bow hold with the thumb *between the second and third fingers* can cause tension in the base of the thumb. (Without the bow, hold the hand in bow-hold position. Move the thumb very slowly towards the fourth finger. The closer the thumb gets to the fourth finger the harder the muscle becomes in the base of the thumb.)

The thumb should not be placed *between the first and second fingers* because this gives an unbalanced distribution of the fingers, with three fingers one side of the thumb and one the other side. Another reason is that the first finger would be too near the thumb, causing it to have to work too hard. Any downward pressure from the first finger has a greater effect the further away from the thumb it is.

Fig. 2

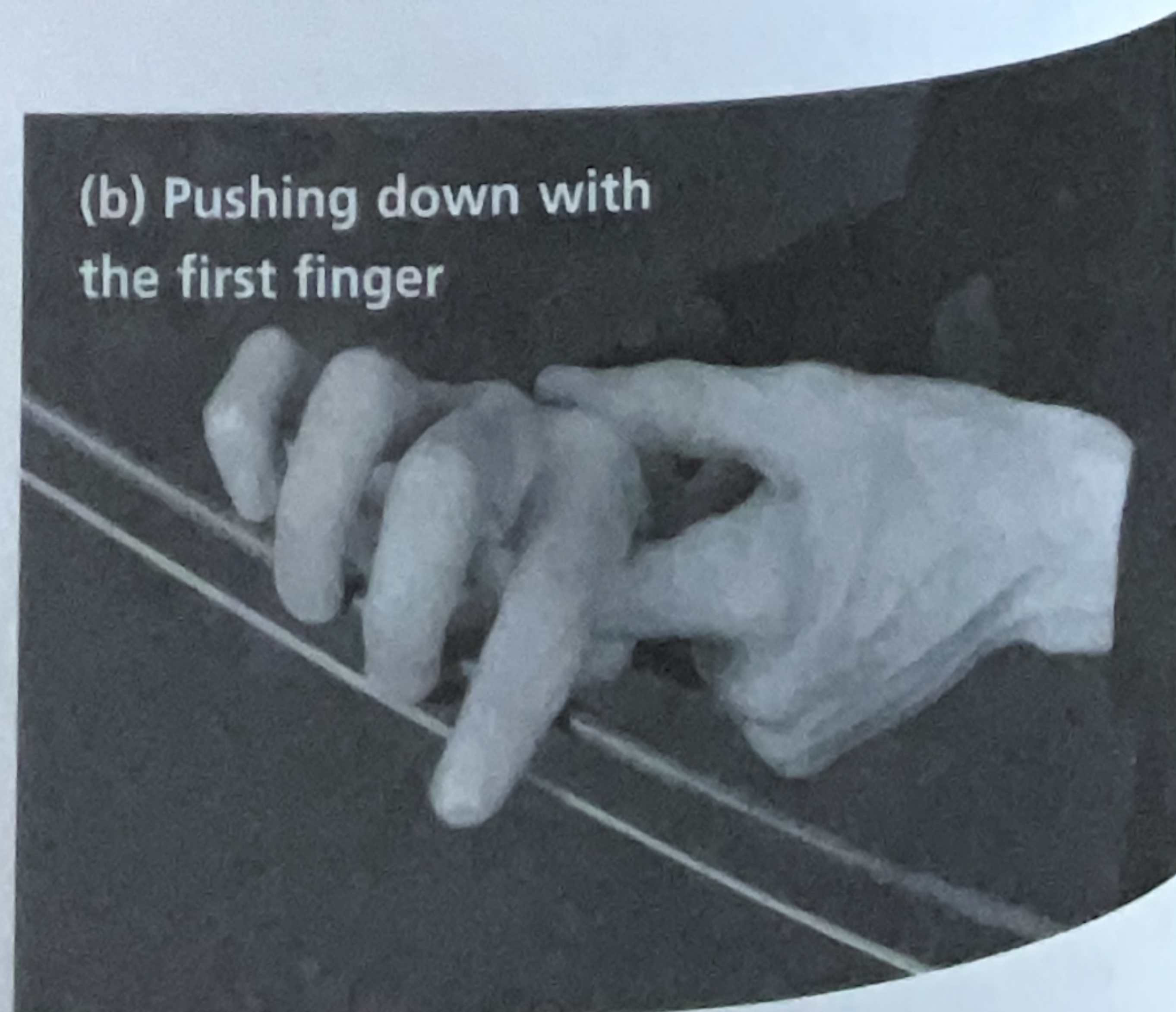
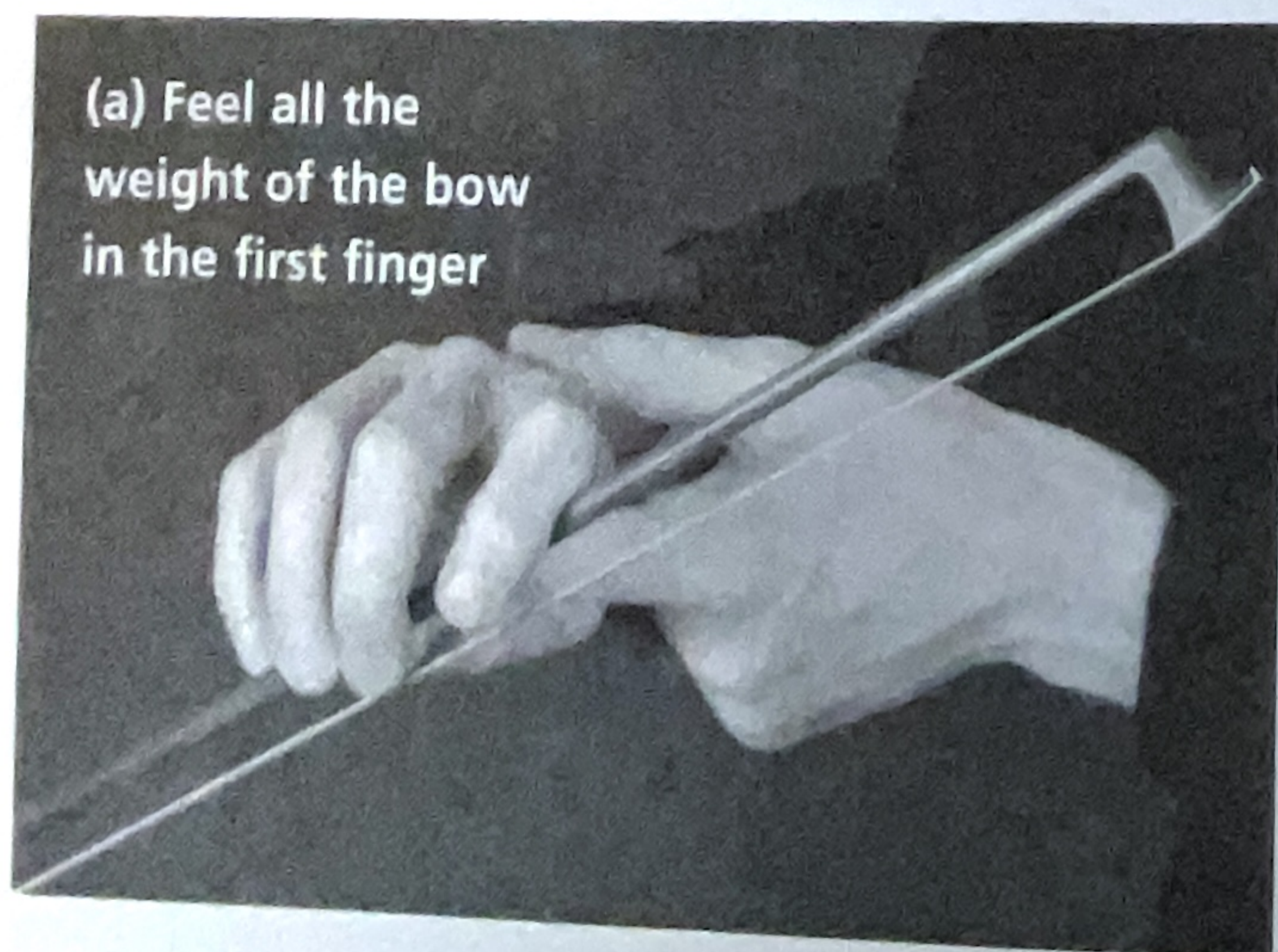


Thumb and second finger relationship

Use a normal bow hold throughout this exercise. Move the tip of the bow up and down using only the fingers, not the hand. To help isolate the finger movement so that the hand itself remains still, hold the right hand with the left hand. Place the thumb on the back of the hand, and the first finger in the palm of the hand.

- 1 Hold the bow in the upper half (Fig. 3a). Feel the first finger supporting all the weight of the bow.
- 2 Push down with the first finger, making the heel of the bow move up (Fig. 3b). Notice the fourth finger curving at the same time. Keep the forearm still and use only the finger to move the bow.
- 3 Release the first finger pressure, letting the heel of the bow move down. Feel the bow moving around the thumb and second finger, like the centre of a seesaw. Repeat the movement several times, in a continuous motion.
- 4 Repeat with the hand in the middle of the bow, where less weight is pushing into the first finger; at the point-of-balance, where the bow feels evenly balanced; and in the normal bow-hold position, where the fourth finger supports all the weight.

Fig. 3



Holding the right hand with the left hand while doing the exercise

Thumb flexibility

Invisible, unconscious movements of the thumb are an essential part of almost all bowstrokes. A rigid thumb can badly affect the entire bow arm.

- 1 Playing lightly near the fingerboard, play whole bows on one note. Keep the hand and fingers loose and relaxed.
 - 2 Bend and ^{rects}straighten the thumb ten or more times during each bow (Figs. 4a and 4b). The fingers should curve and straighten at the same time.
 - 3 Repeat while playing between the bridge and the fingerboard, where the bow will be heavier and deeper in the string. Keep the fingers and thumb relaxed and free.
 - 4 Finally, make the movement while playing very heavily near the bridge. The thumb and fingers should remain free even though a lot of weight now has to go into the bow. Keep the right shoulder relaxed.
- Repeat on each string. Play double stops as well as single notes.



Fig. 4

Balancing with the fourth finger

Playing in the lower half, the fourth finger sits on the bow as on a seesaw, controlling the pressure of the bow in the string. In the upper half the fourth finger balances the first finger, preventing the tone from becoming too pressed.¹ Balancing the bow with the fourth finger is also a major part of all lifted bowings.

Exercise 1

Point the bow slightly more towards the left shoulder, as it does during normal playing. Keep the thumb curved and relaxed.

The usual position for the fourth finger is on the *upper, inside edge* of the bow, but in this exercise place it directly on top of the bow. Keep the fourth finger curved all the time.

- 1 Turn the hand clockwise so that the bow points to the right, and the hair is above the stick (Fig. 5a).
- 2 Make a fast, anticlockwise movement so that the bow is suddenly returned to its normal position. Make the movement so quickly that there is a 'swishing' noise as the air rushes through the hair. Feel all the weight of the bow going into the little finger (Fig. 5b). Relax the thumb.

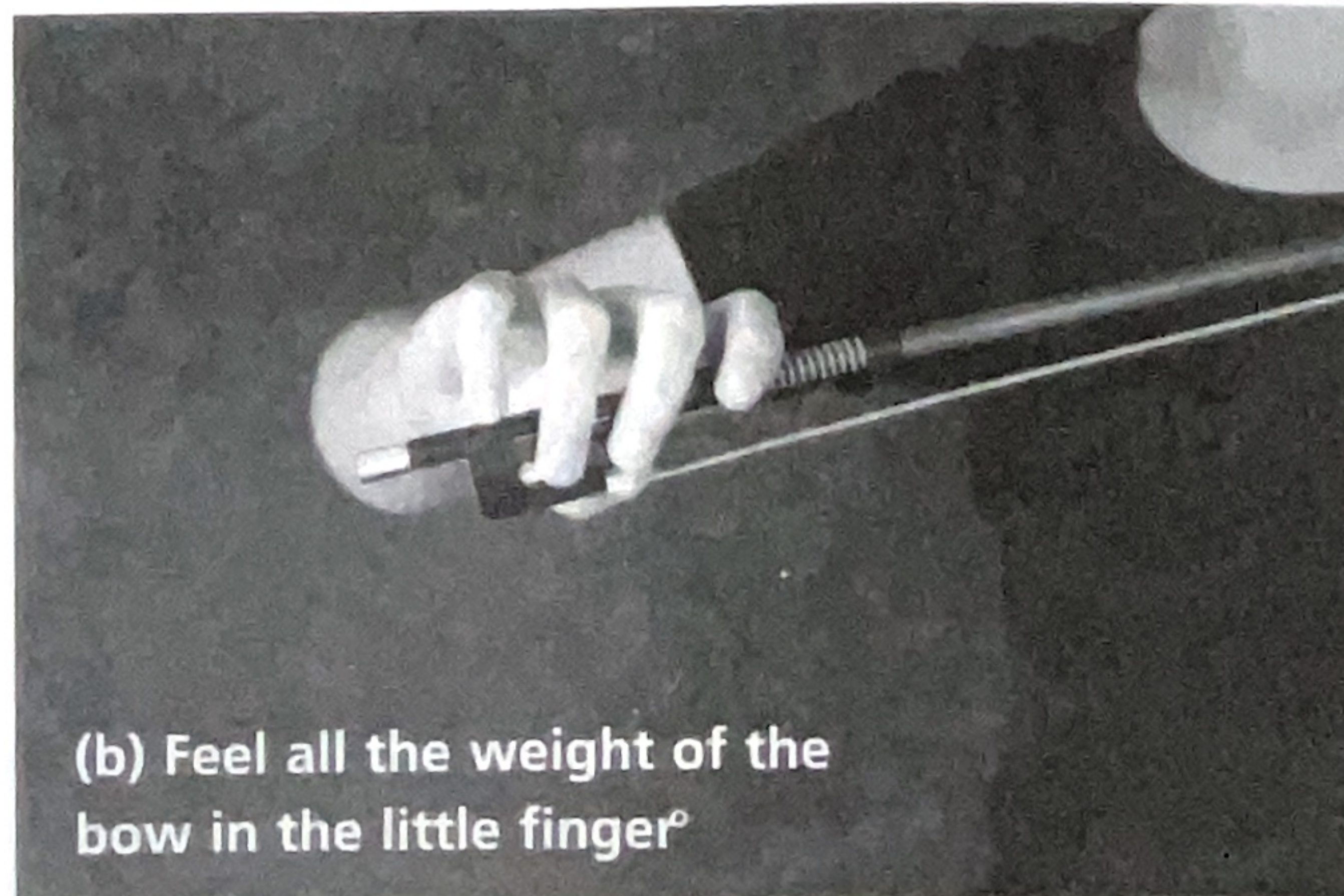
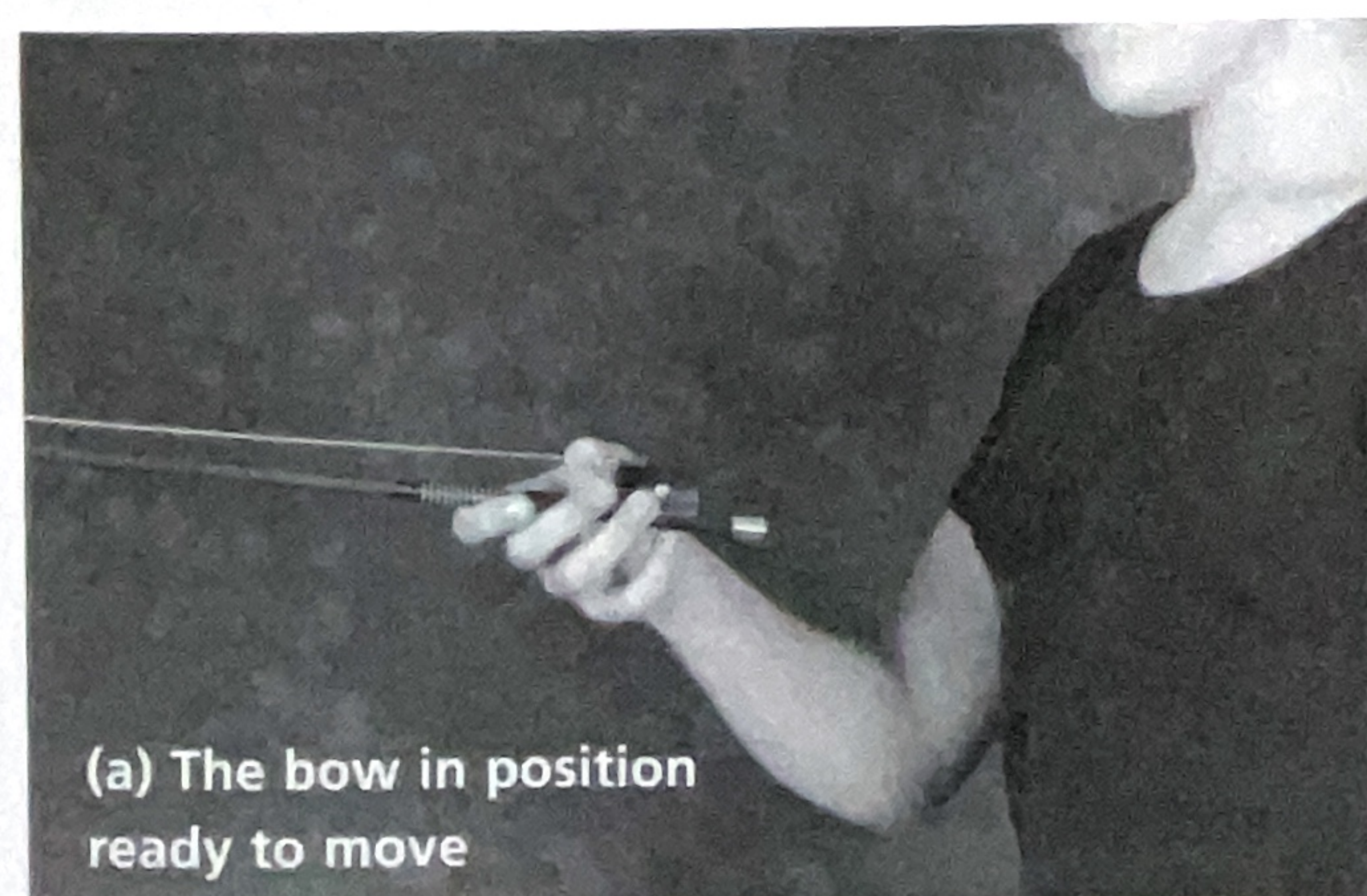


Fig. 5

¹ Some schools say that the fourth finger should be taken off the bow in the upper half; certainly players with short arms often cannot reach the point (with a straight bow) if they do not let the fourth finger come off the bow. If you take the fourth finger off you have to be extra careful not to squash the sound by over-pressing with the first finger.

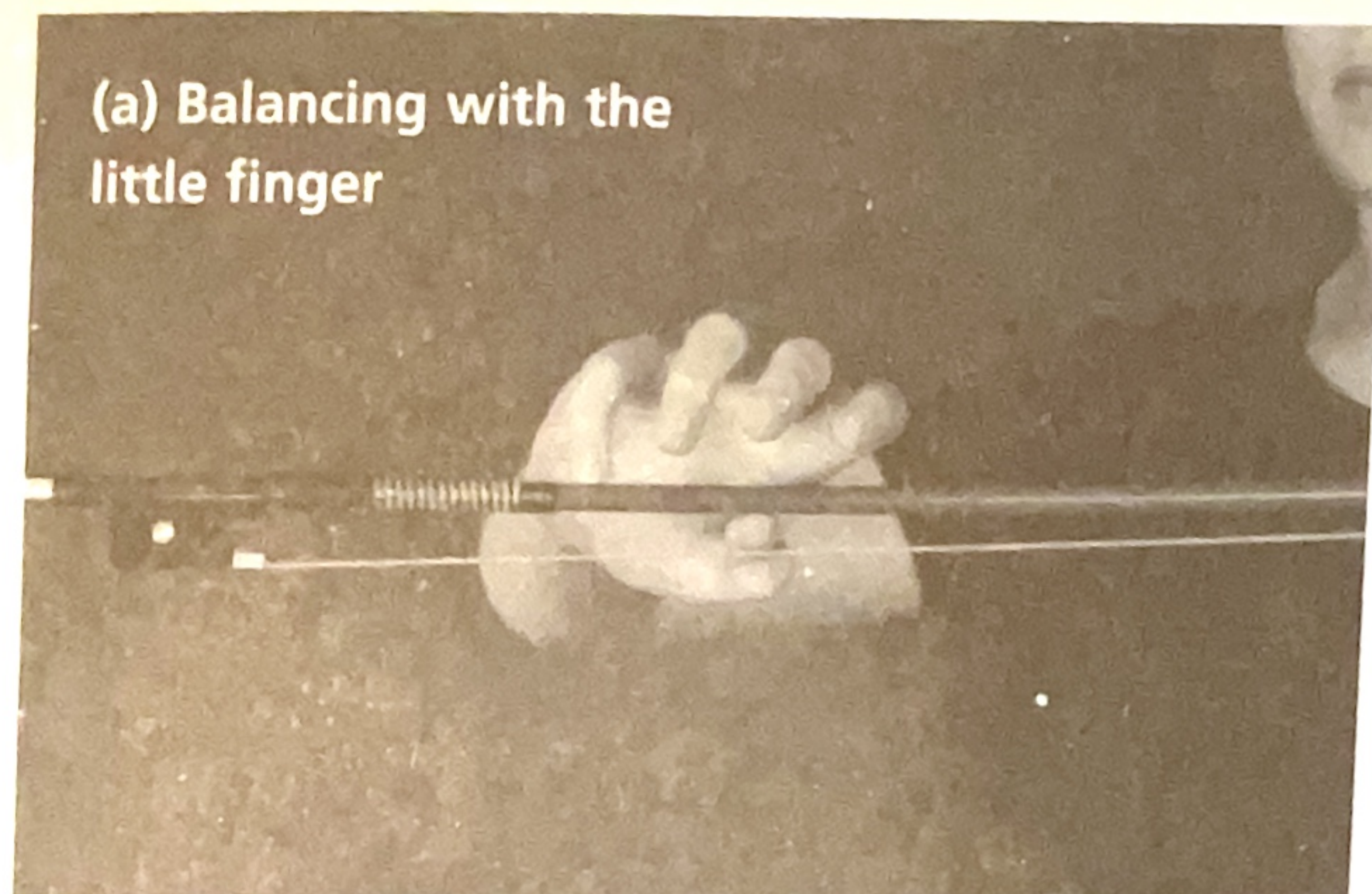
¹ The point-of-balance is below the middle of the bow because the heel end of the bow is heavier than the point end. Many spiccato or semi-lifted bowings feel particularly balanced and comfortable here.

Exercise 2

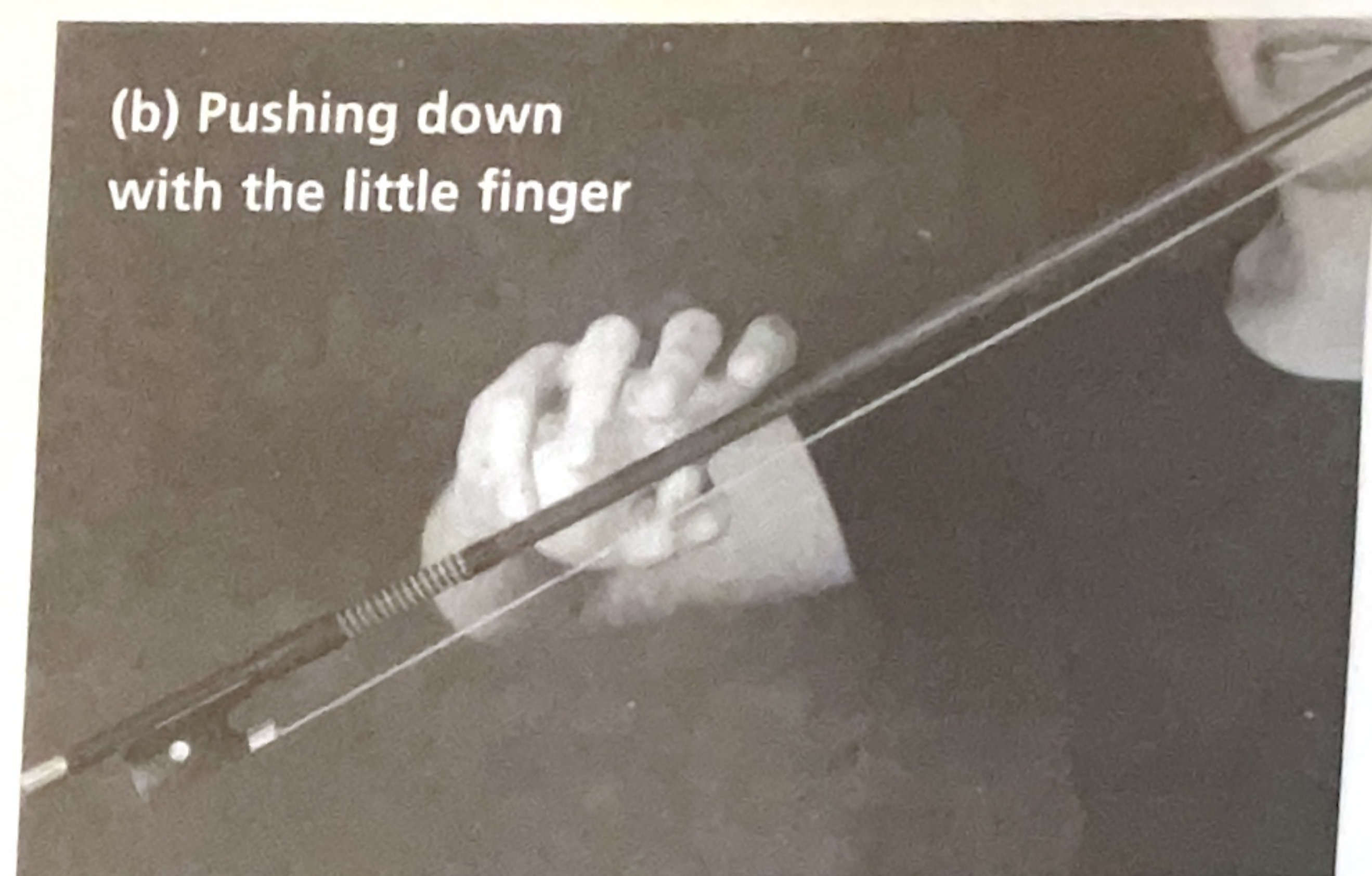
Point the bow slightly more towards the left shoulder, as it does during normal playing. Keep the thumb curved and relaxed.

- 1 Hold the bow with only the thumb and fourth finger, just below the point-of-balance¹ (Fig. 6a). Place the fourth finger directly on top of the stick.
- 2 Move the point of the bow up, by pushing down with the little finger (Fig. 6b), and then let the point down again to the starting point (Fig. 6a). Keep the forearm still and use only the finger to move the bow. Repeat this a few times, in a continuous motion.
- 3 Place the hand a few centimetres closer to the frog and repeat. Continue, gradually getting closer to the frog, until the hand is in its usual position.

Fig. 6



(a) Balancing with the little finger



(b) Pushing down with the little finger

Holding the bow without gripping

The fingers must always be *alive* on the bow. Tiny adjustments to the bow hold have to be made all the time, because the conditions of playing are always changing. From note to note, the brain sends millions of subconscious messages to the fingers to change their contact with the bow. These often invisible changes are instinctive reactions to musical feeling and to the changing contacts of the bow with the string, rather than being something that can be taught or learnt. The bow has to be held without undue tension so that the spontaneous adjustments can occur without restriction.²

You also have to be able to make larger, deliberate alterations to the bow hand, for instance, when playing *pp* one moment and *martelé* the next.

Exercise 1

The fingers hold the bow firmly in strong, forceful playing, even squeezing it at times (for instance, playing a stroke that begins with a sharp bite). Other strokes require more of a bow *balance* than a bow *hold* or bow *grip*.

There is nothing wrong with a strong bow hold when needed, as long as it is always followed by release when no longer needed. To avoid tension, the norm should be a bow balance with a stronger grip when required, rather than the other way round.

- 1 Tilt the bow over, as though playing on the outer edge of the hair. Place the fourth finger on the *upper, inside edge* of the bow. Take the second and third fingers off the bow (Fig. 7a).

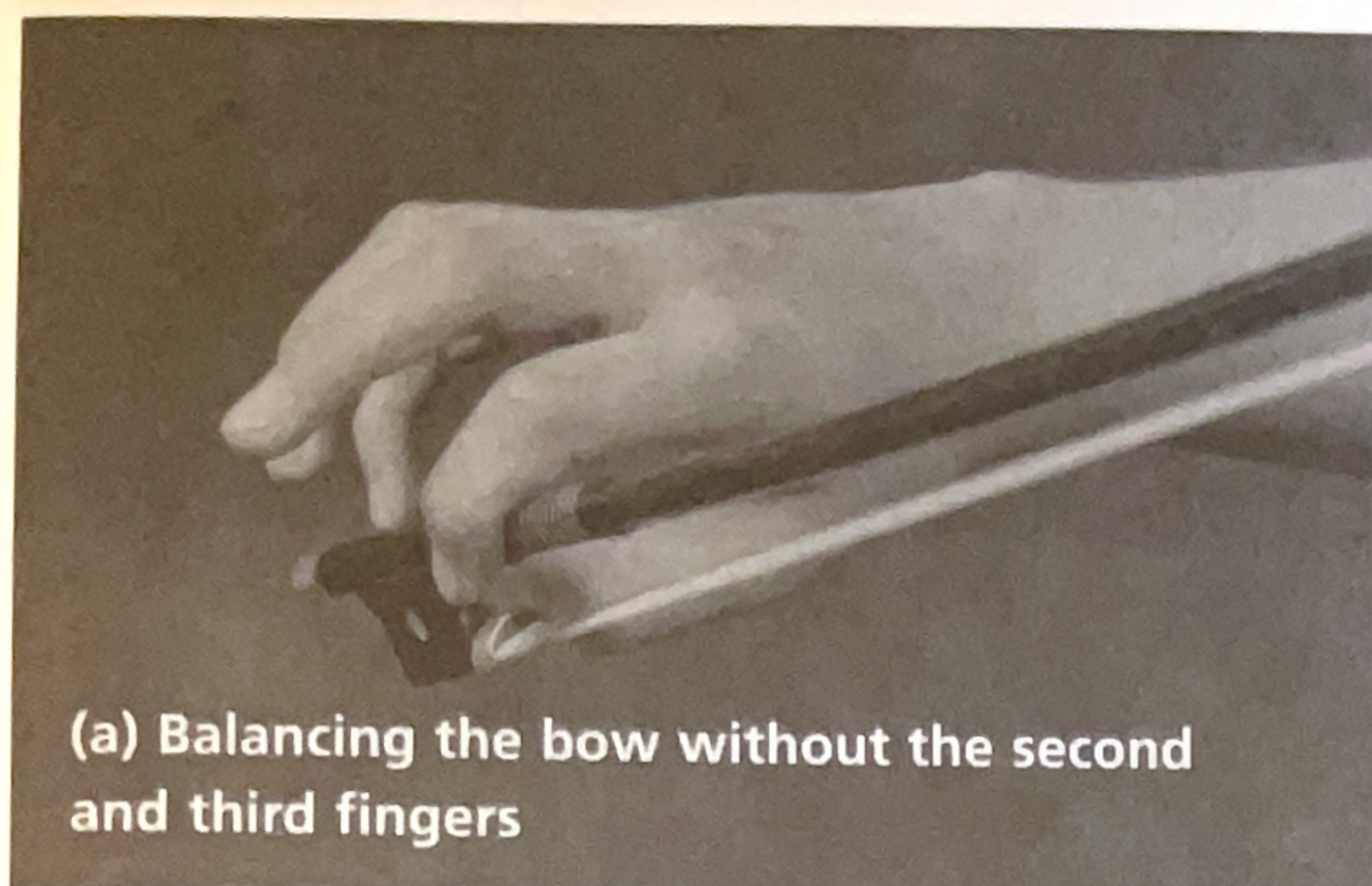
Notice the weight of the bow resting on the pad of the first finger and balanced by the fourth finger and thumb. All three support the bow – if any were taken off, the bow would fall. In this position, the bow is balanced in the hand, and does not need to be ‘held’.

- 2 Put the second finger on the frog slightly more to the left of the thumb than usual. Take the first finger off.

Now the bow is balanced by the second and fourth fingers, and by the thumb (Fig. 7b). Feel the weight of the bow resting against the second finger.

- 3 Put the first and third fingers back on the bow and hold it normally with all the fingers. Find the same feeling of weight and balance in each finger, without gripping the bow with the fingers.

² ‘Our sensitivity diminishes in proportion to the total amount of stimulation. If there are two candles lit in a room, we easily notice the difference in brightness when a third candle is lit. But if there are fifty candles burning, we are unlikely to notice the difference made by a fifty-first. The harder we press on a violin string, the less we can feel it. The louder we play, the less we hear. The more relaxed and ready the muscles are, the more different ways they can move.’ Stephen Nachmanovitch, *Free Play – Improvisation in Life and Art* (Los Angeles, 1990), 63.



(a) Balancing the bow without the second and third fingers



(b) Balancing the bow without the first and third fingers

Fig. 7

Exercise 2

However firmly the fingers hold the bow, they should be able to move freely and flexibly. In this exercise keep the hand quite still, with only the fingers moving. Feel the *pads* of the first and third fingers, the joint nearest the nail of the second finger, and the *tips* of the thumb and fourth finger, on the bow. However firmly they hold the bow, the fingers can move freely, and independently of the hand.



- 1 Hold the bow pointing up vertically.
- 2 Move the tip of the bow in circles *using only the fingers* (Fig. 8). Hold the bow very firmly, and move the fingers as far as possible. It may be helpful to hold the right hand with the left, to make sure that only the fingers move.
- 3 Do the same with the bow in playing position.
- 4 Do the same with the bow pointing to the right, bow hair above the stick.

Fig. 8

Exercise 3

- Play several slow, whole bows, *ff*.
- Bowing up and down continuously, move the hand up to the middle of the bow and back again to the heel, using only the fingers to crawl up and down the stick.

It will not be possible to continue crawling up the bow beyond a certain point near the middle, but move up as far as possible. Still play the up-bows to the heel even when your hand is near the middle of the bow. The most difficult part is crawling back down the bow again to the frog.

Hand balance

At the heel, the first finger contacts the bow closer to the nail joint (Fig. 9a), which makes the hand slightly more vertical on the bow. The fourth finger balances the weight of the bow.

At the point, the first finger contacts the bow closer to the middle joint (Fig. 9b), which makes the hand slightly tilted, i.e., turned away from the fourth finger towards the first finger.

The first finger has two jobs to perform:

- 1 The part of the first finger on top of the stick injects weight into the string.¹ Except when playing *f* it touches the stick lightly, and in the lower half sometimes comes a hair's breadth away from the stick.
- 2 The part of the first finger on the side of the stick helps to keep the bow straight.

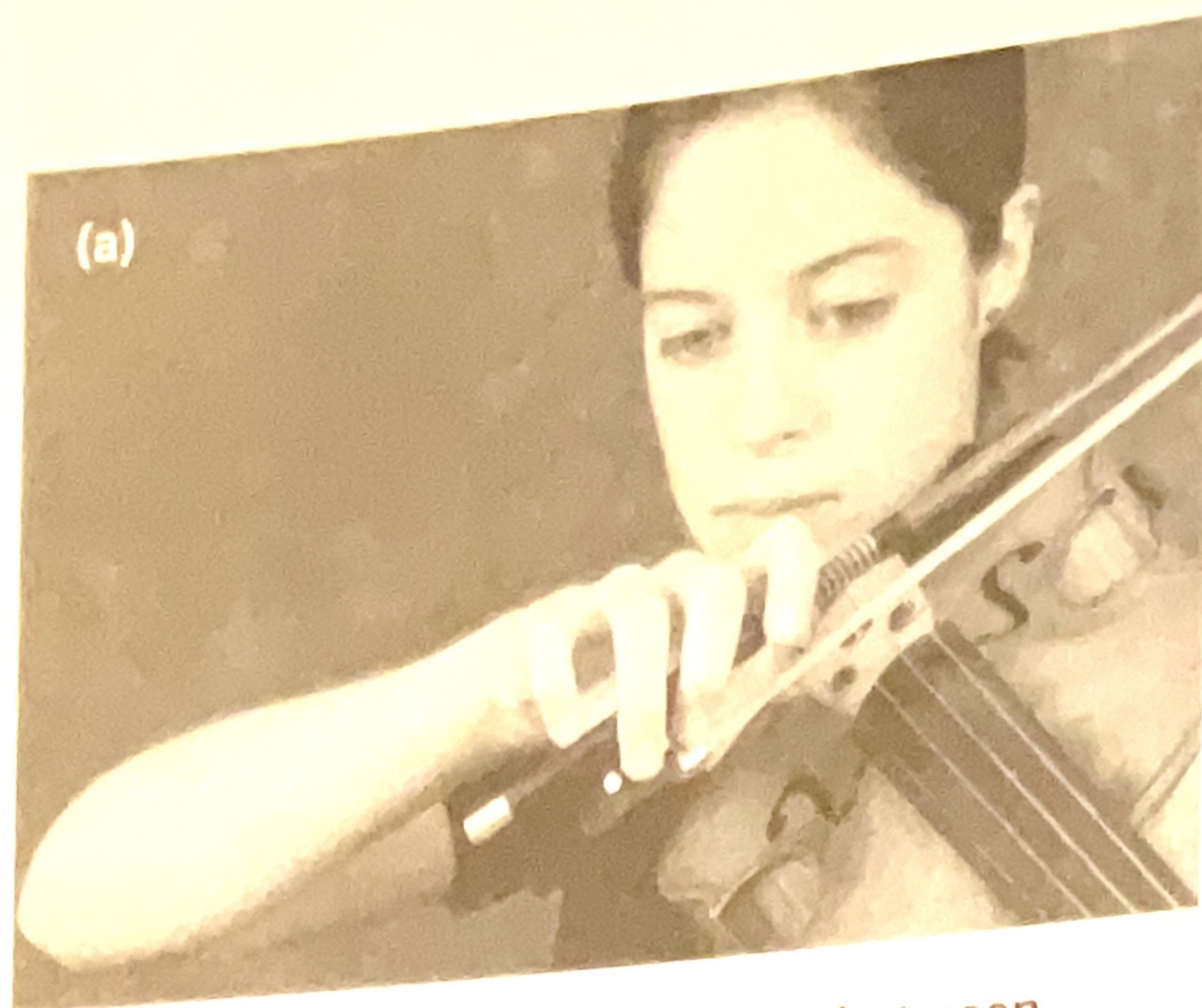
Because the contact point on the side of the stick does not change, it feels as though the first finger stays fixed in one position – even though the contact point on top of the stick changes between the heel (nearer the nail joint) and the point (nearer the middle joint).

The fourth finger should stay on the stick in the upper half unless the hand is too small, keeping the hand balanced on the bow and helping to avoid too much first-finger pressure.

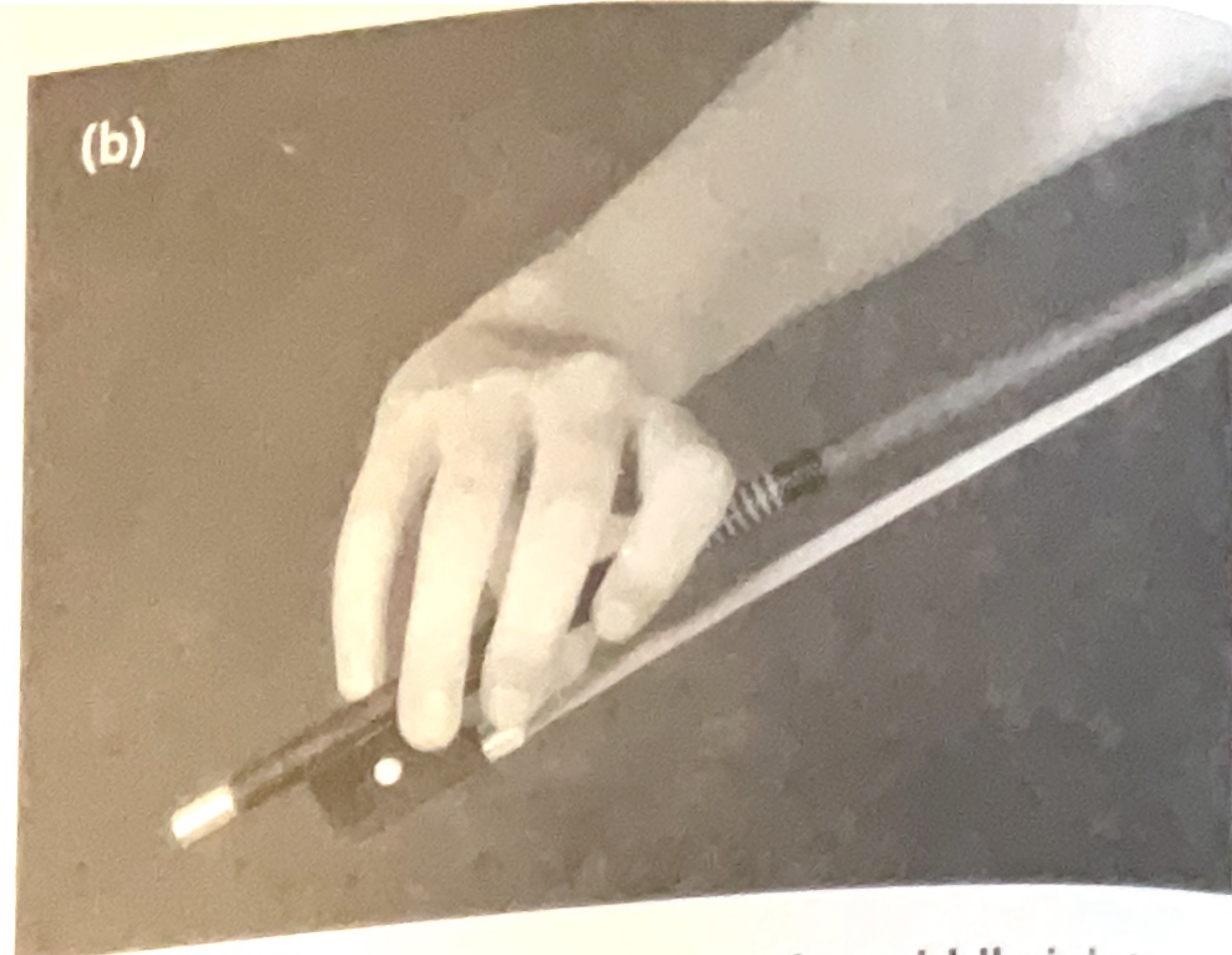
The change from more vertical at the heel (Fig. 9a) to more tilted at the point (Fig. 9b) must happen smoothly or the bow will shake somewhere around the middle of a whole down-bow stroke.

¹ The second finger also injects weight into the string. To do this it must be positioned slightly to the left of centre opposite the thumb. (See Fig. 2, page 2.) Sharing the weight between the first and second fingers produces a less pressed, more rounded tone than if you use only the first finger.

Fig. 9



The first finger contacting the bow between the nail joint and the middle joint



Contacting the bow nearer to the middle joint

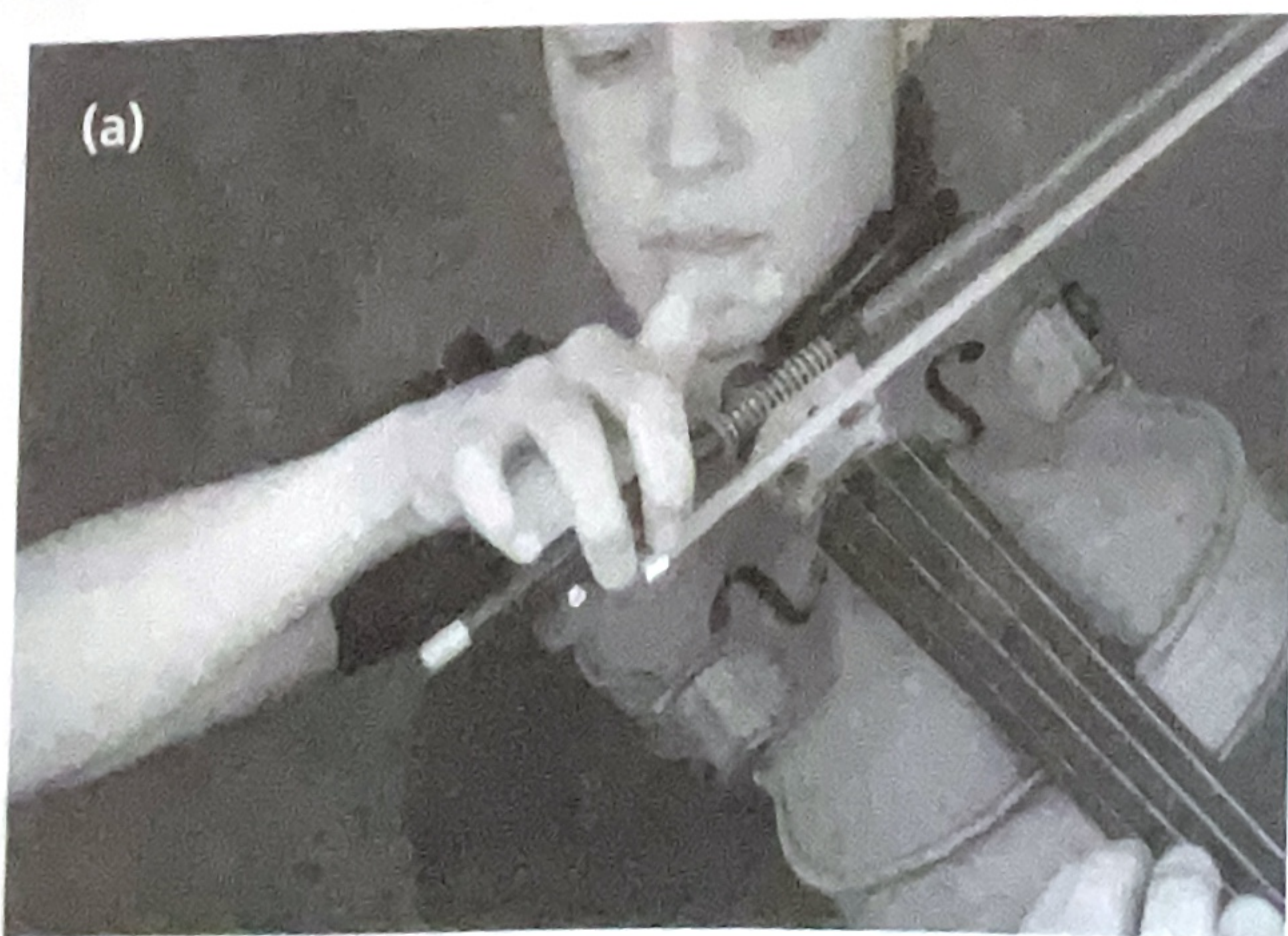
Play slow, even, *ff*, whole bows near the bridge.

- 1 Start playing at the heel without the first finger (Fig. 10a). After a few centimetres put the first finger down in its usual place on the stick.

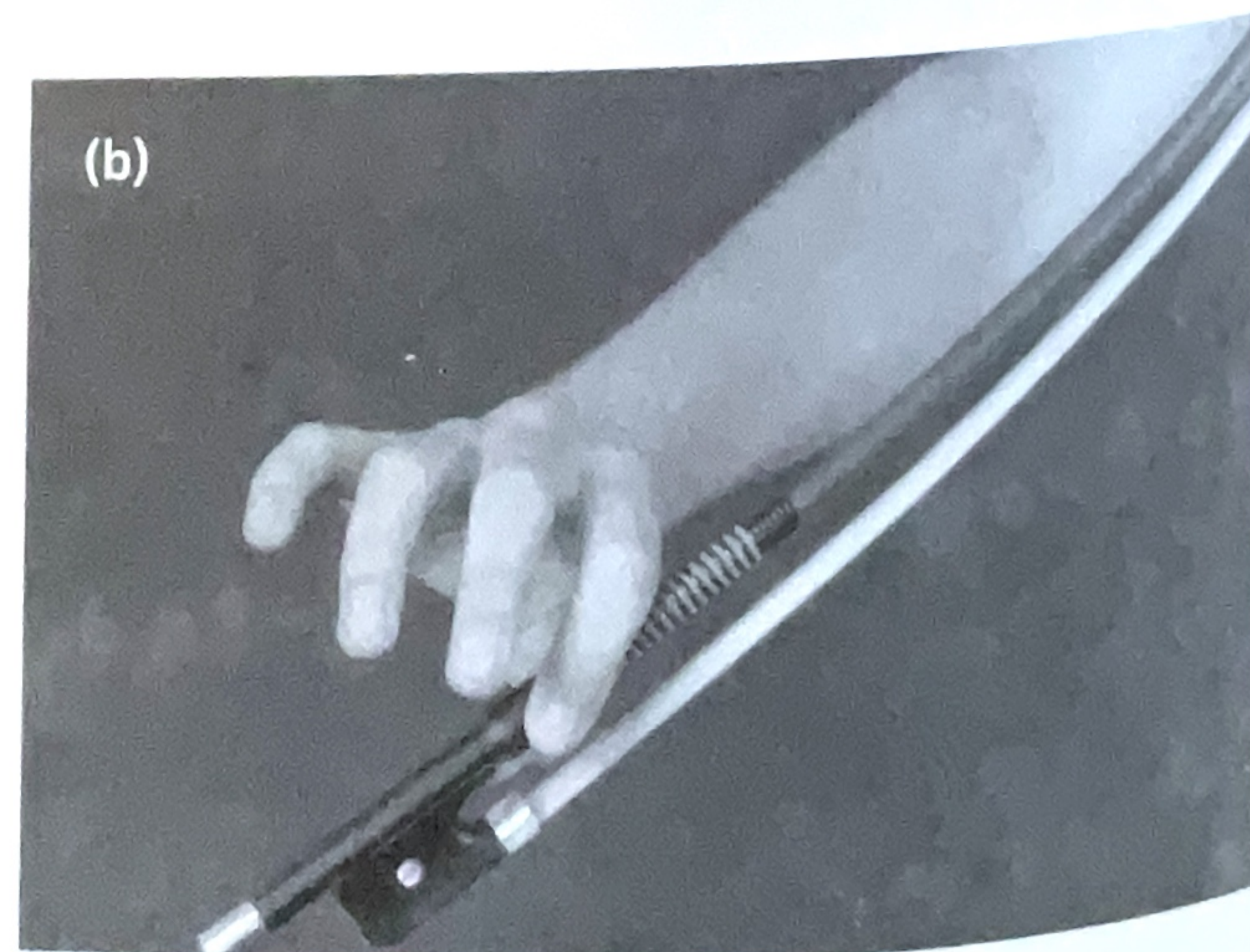
Continuing down-bow, take off the fourth finger, third finger and second finger in that order. Arrive at the point with only the first finger and thumb on the bow (Fig. 10b).

- 2 Up-bow: start with only the thumb and first finger; put the second, third and fourth back on the bow in that order; take off the first finger, and arrive at the heel with all the fingers on the bow except the first. Be careful to put the fingers back in their correct shape and position.
- 3 Do exactly the same, down and up, but without lifting the second finger.
- 4 The same, but do not lift the third finger either.
- 5 Start and finish without the first finger as before, but leave all the other fingers on the bow in their usual place.
- 6 Without lifting any finger, each remaining solidly on the bow, play *f* whole bows with a solid and even tone. Feel the same changes in weight distribution as you play from heel to point and back again.

Fig. 10



Starting position at the heel



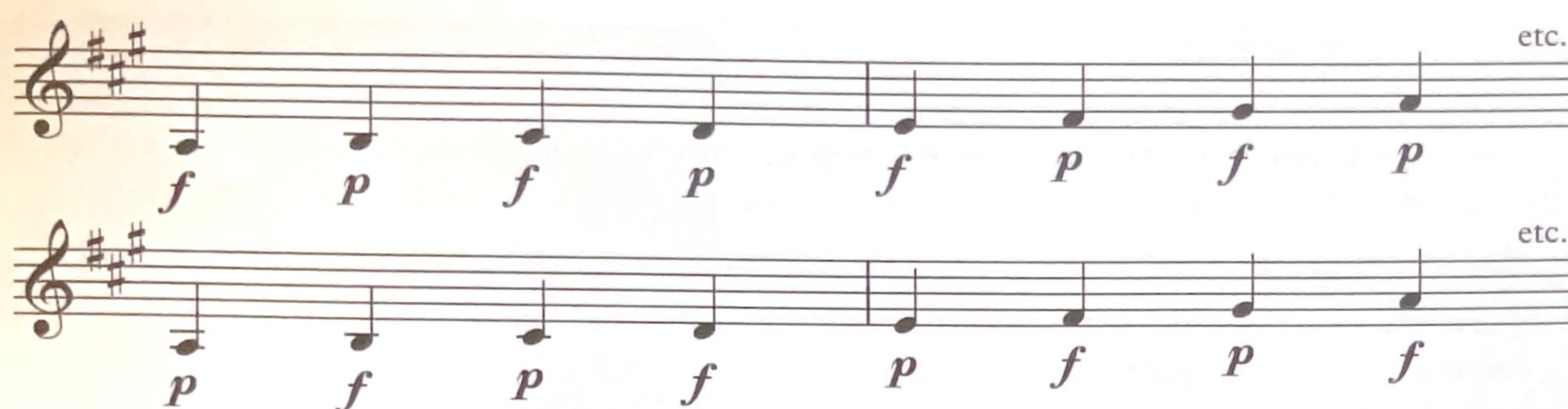
At the end of the first down-bow

10

The give of the hand into the bow

This exercise exaggerates lowering and raising the knuckles.

- For the purposes of the exercise, during the *f* hold the bow firmly and lower the knuckles (Fig. 11a). At the same time curve the thumb and fourth finger.
- During the *p*, release the fingers on the bow and raise the knuckles (Fig. 11b). At the same time let the thumb and fourth finger straighten slightly.
- Play the strokes with an even bow speed and pressure, connecting them to each other seamlessly. Play *subito f* and *subito p*, without any *crescendo* or *diminuendo*.
- Play quarter-length strokes at the heel, middle and point. Repeat using half bows in the lower half, middle, and upper half.



Play two-octave scales in one position across the strings, major or minor, in the following keys:

1 A (1st position)

2 E (5th position)

3 A (8th position)



Lower knuckles ready to begin the down-bow



Higher knuckles ready to begin the up-bow

Fig. 11

Vertical and horizontal finger movement

Exercise 1 – Vertical

- Hold the bow two centimetres above the string at the nut, with exaggeratedly rounded fingers and low knuckles (Fig. 12a).
- Place the bow on the string by straightening the fingers (Fig. 12b), and then lift off back to the starting point by curving the fingers again.
- Keep the arm and hand still, using only the fingers to lower or raise the bow. Repeat the movement up and down several times.

Make sure that the thumb moves freely with the fingers: when the fingers straighten the thumb straightens, and when the fingers curve the thumb curves.



The fingers curved ready to place the bow on the string



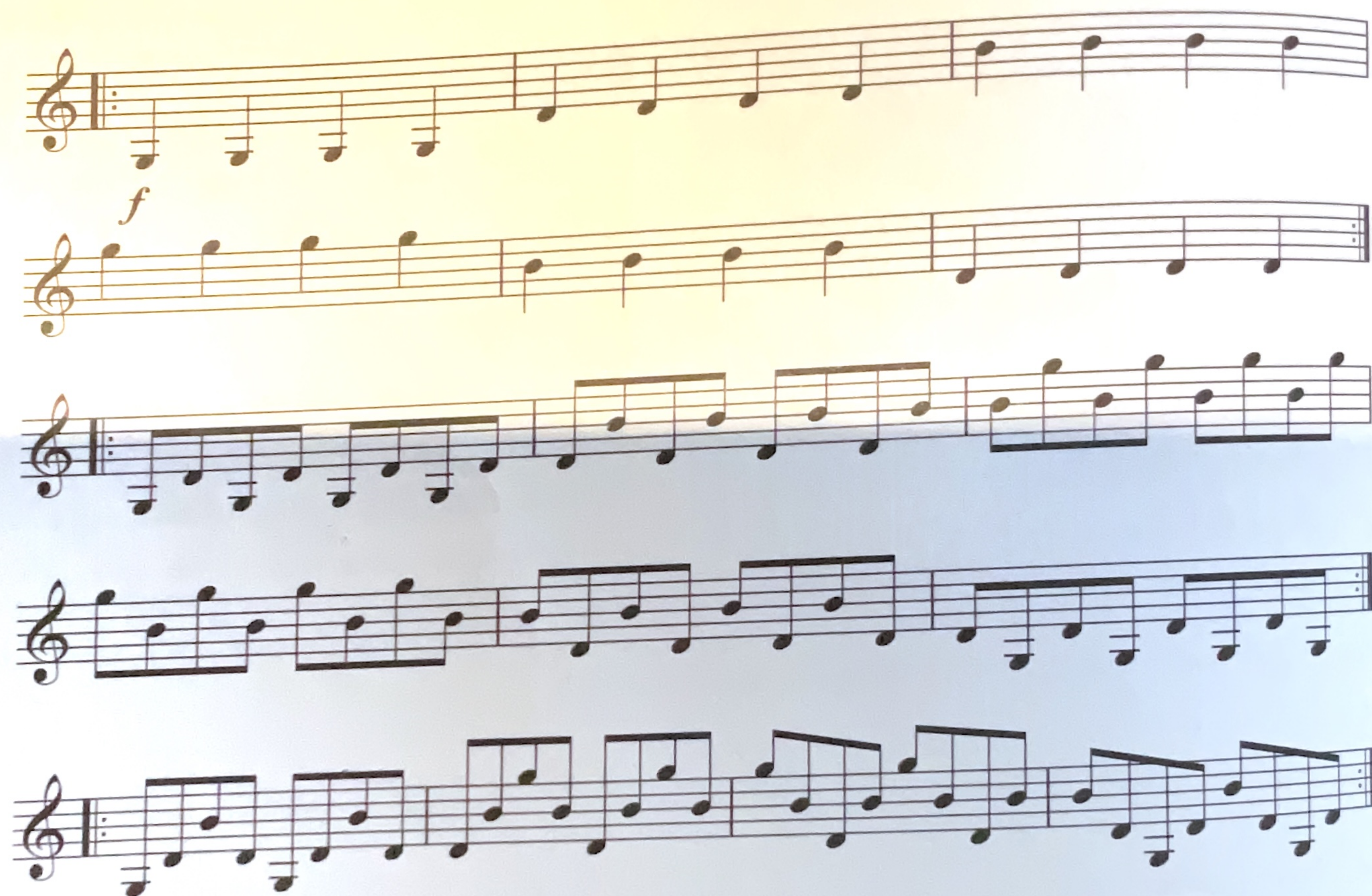
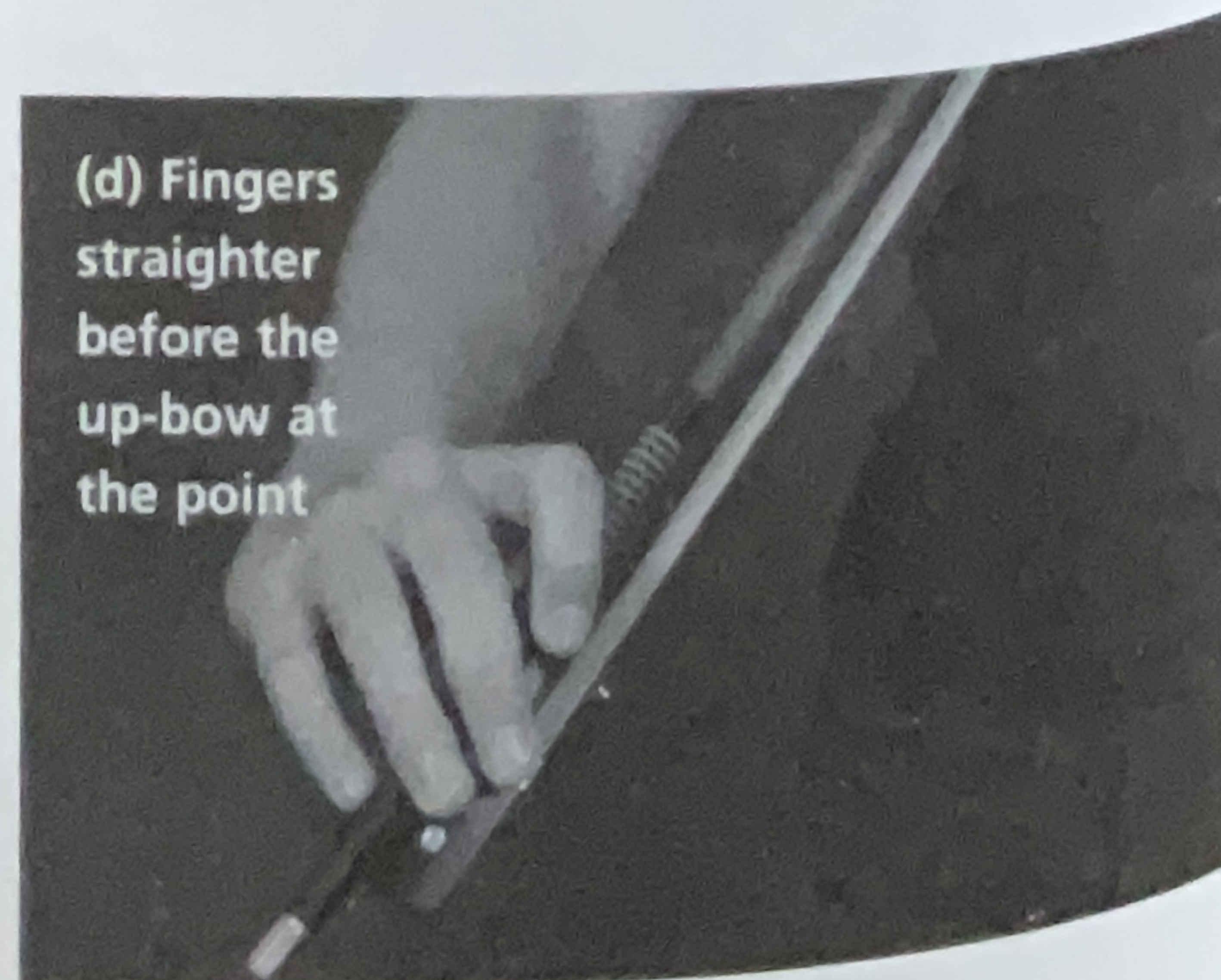
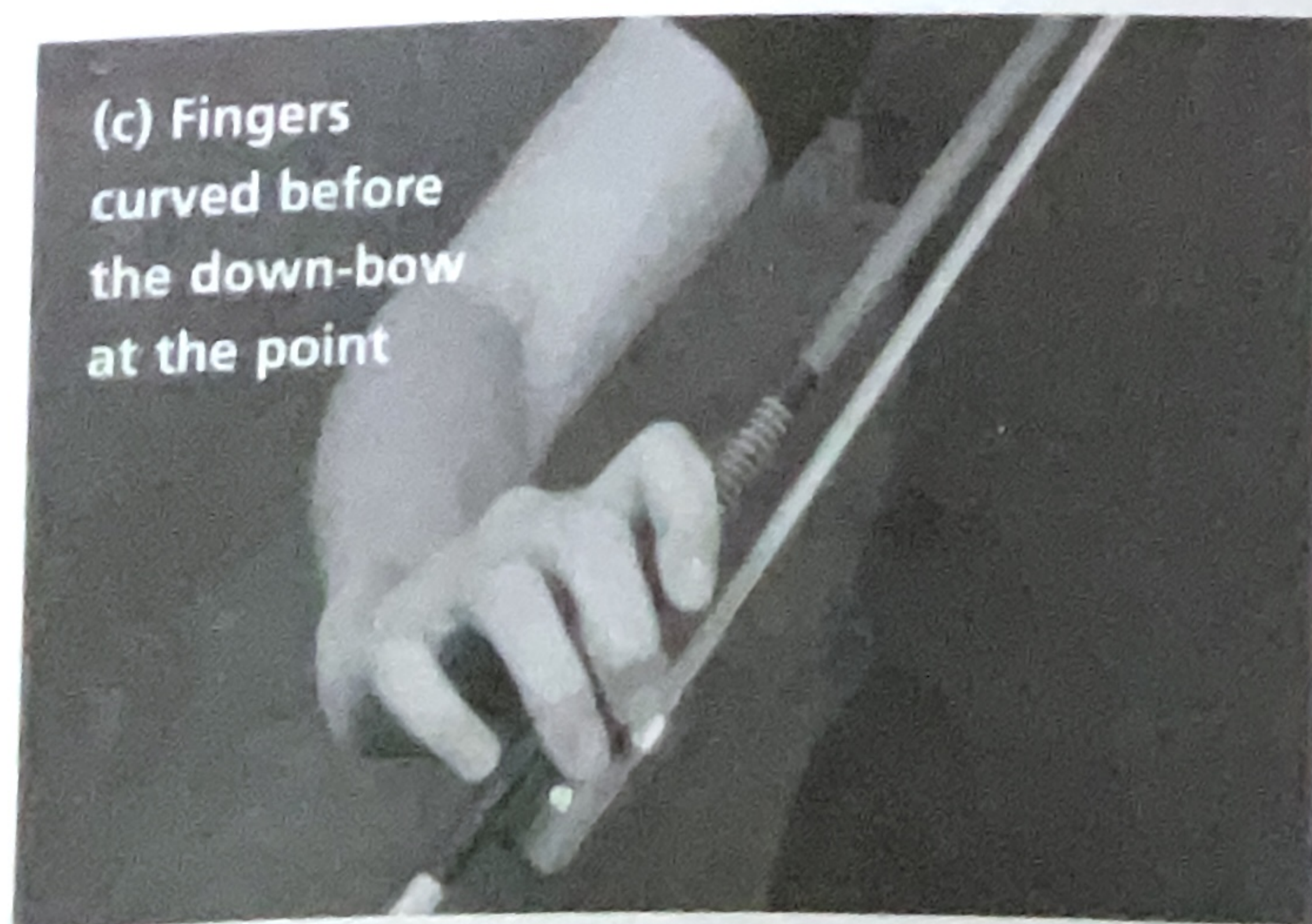
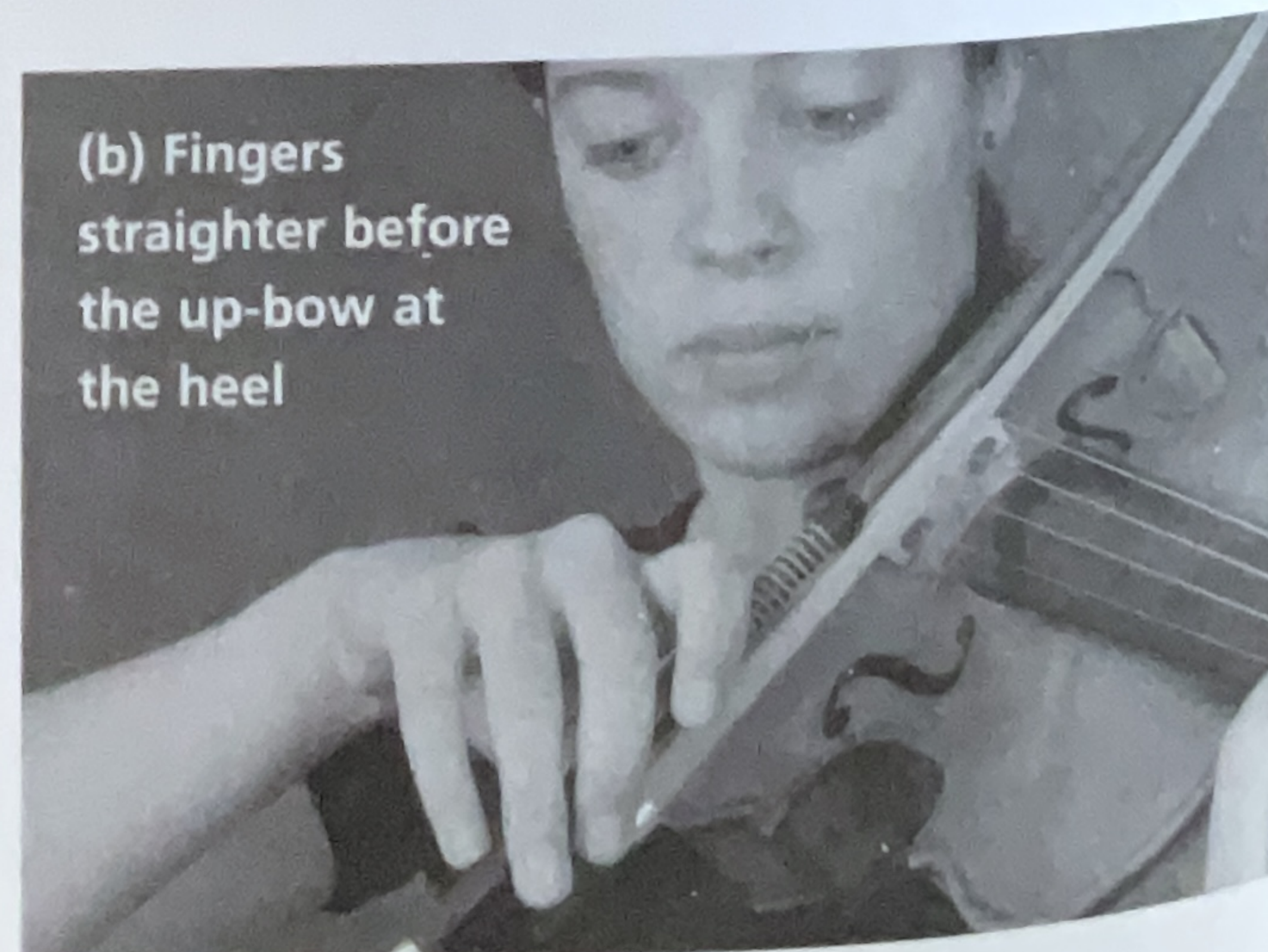
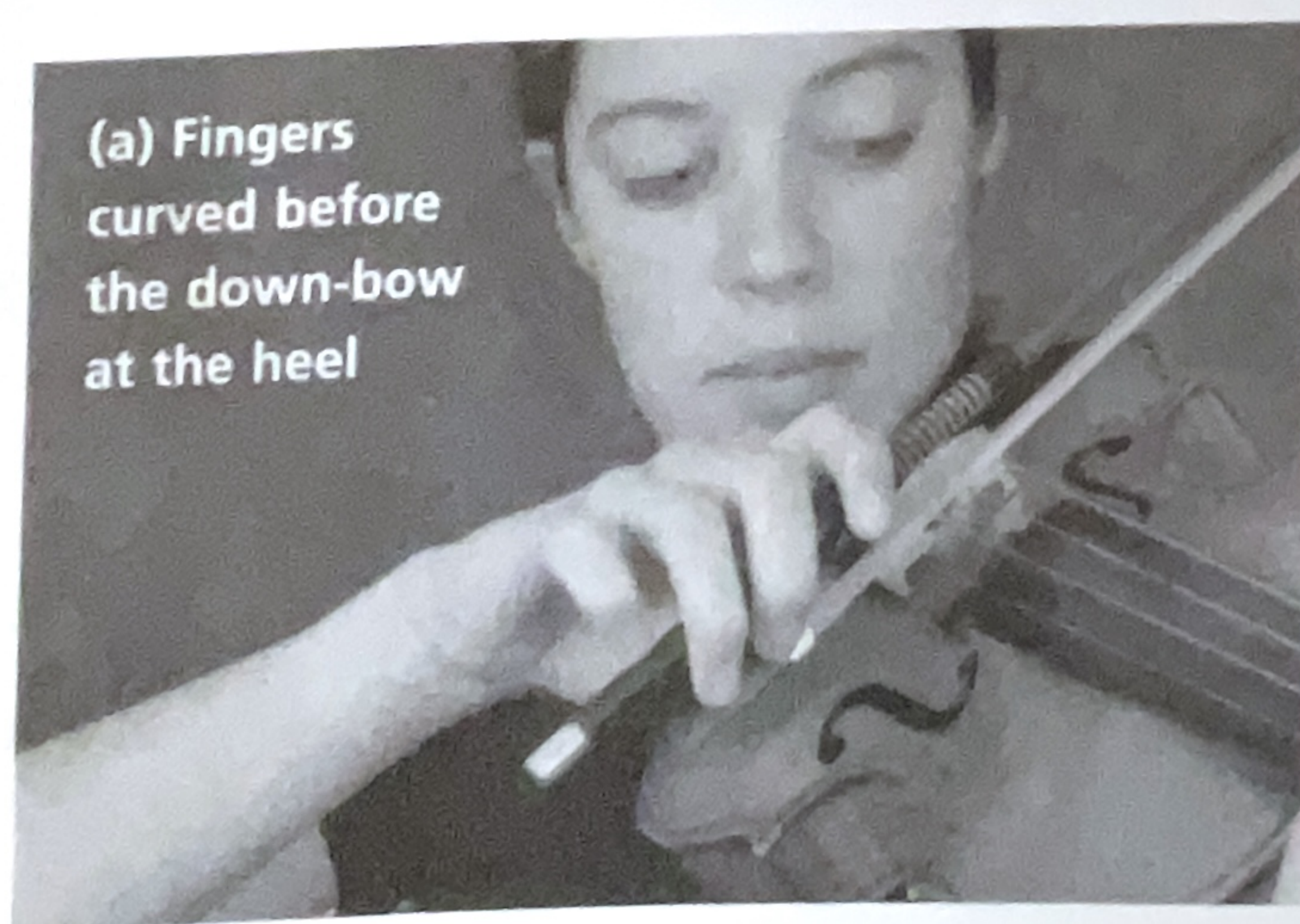
Placing the bow on the string

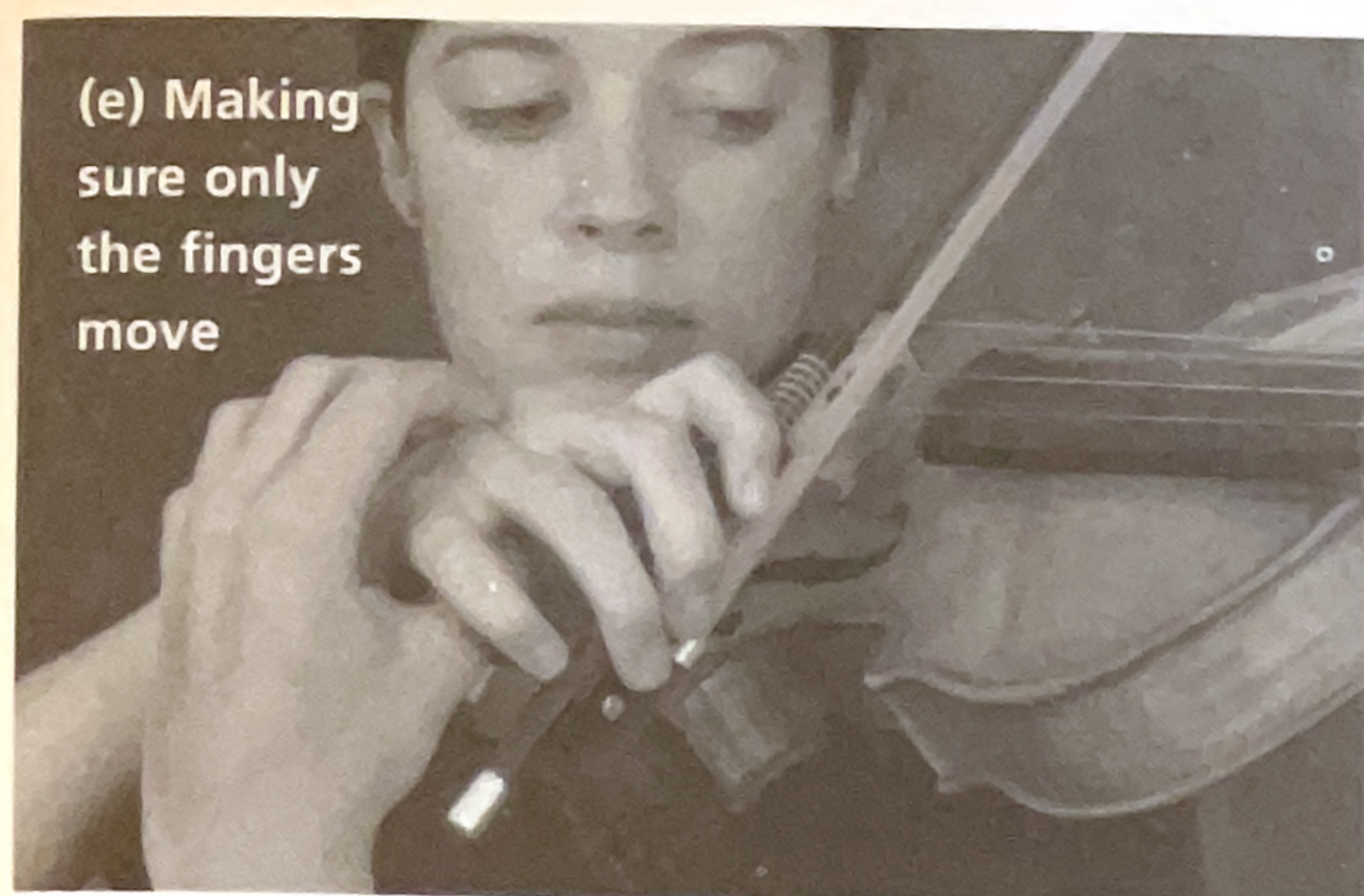
Fig. 12

Exercise 2 – Horizontal

There is really no such thing as a 'horizontal' finger movement. The fingers are hardly able to move sideways, but when they are placed on the bow so that they lean towards the first finger, rather than vertically, straightening and curving the fingers moves the bow horizontally along the string.

- Play *f*, but using only the fingers to move the bow. Keep the arm and hand as still as possible.
- Curve the fingers to move the bow up, straighten to move down. Figs. 13a and 13c show the fingers curved, ready to move down.
- Curve the fingers to move the bow up, straighten to move down. Figs. 13b and 13d show the fingers straighter, ready to curve for an up-bow.
- Use a mirror to see that the bow stays parallel to the bridge.
- Play at the heel, middle and point.

**Fig. 13**



Making sure only the fingers move

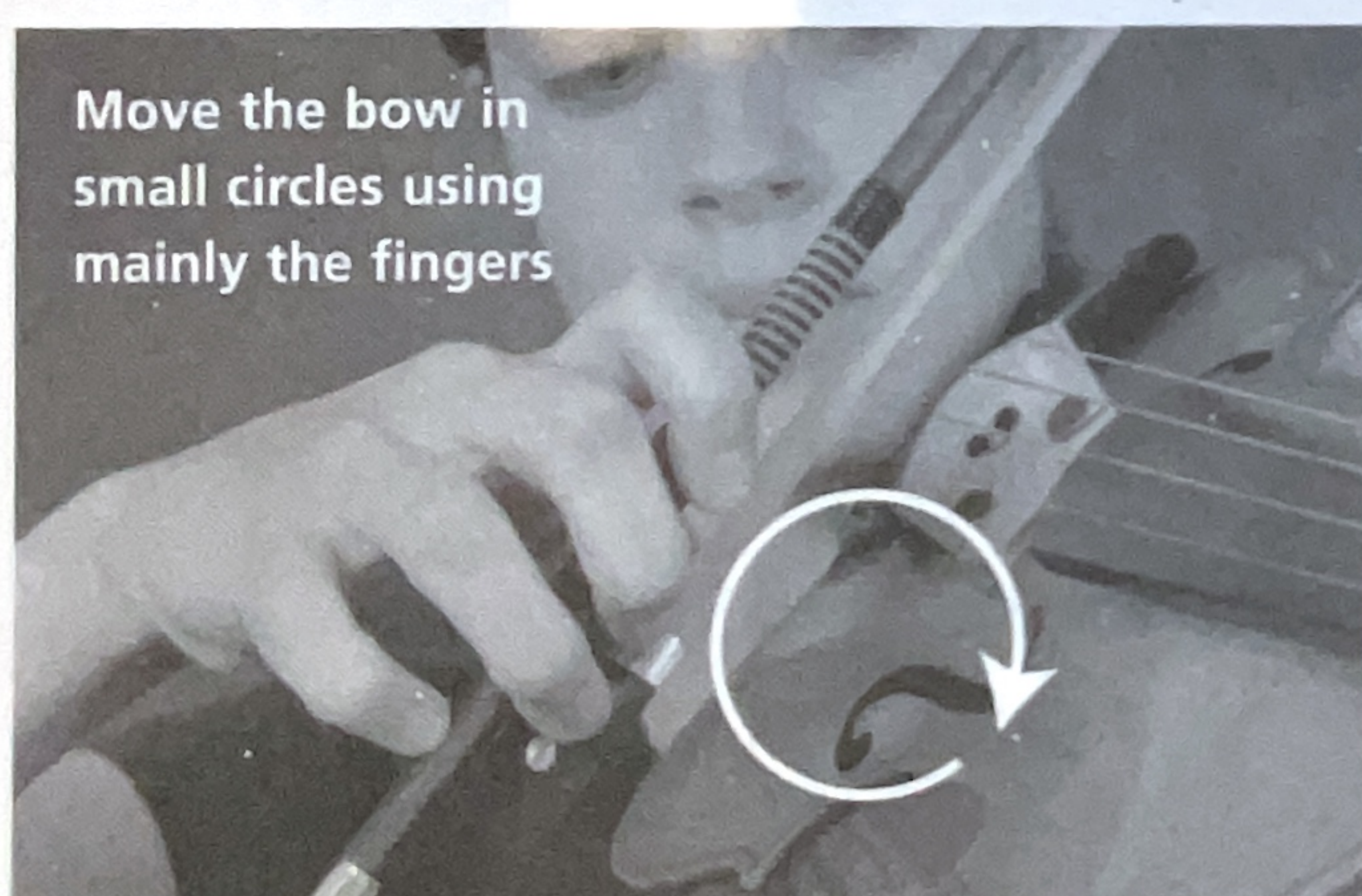
Play a few open strings at the heel, holding the right hand with the left hand (Fig. 13e). Place the thumb in the palm of the hand, and the first finger on the back of the hand. This helps to isolate the finger movement so that the hand itself remains still.

Exercise 3 – Vertical and horizontal combined

Make small circles by combining the flexing movement of the fingers with a small amount of circular hand movement.

Use *as much* finger movement as possible, *as little* hand movement as possible, and no arm movement. Make a sound by touching the string at the bottom of the curve (Fig. 14).

- 1 Start by holding the bow with curved fingers two centimetres or so above the string. The back of the hand and the fingers should be in a straight line.
- 2 Lower the bow to the string in a circular movement, straightening the fingers slightly. Play the note, and lift off back to the starting point by curving the fingers.
- 3 Do this clockwise and anticlockwise, in a continuous motion, at the heel, middle and point.



Changing bow

A little give of the fingers helps the change of bow to be smooth. This exercise exaggerates the give by making it a large, conscious movement of the fingers.¹

Play short (one eighth of a bow), smooth, sustained strokes at the heel, middle and point.

- Just at the end of each down-bow, while the bow is still moving, smoothly straighten the fingers and thumb. At the same time let the hand move slightly in the same direction as the fingers (i.e., down, producing more of an upward curve at the wrist).
- Just at the end of each up-bow, while the bow is still moving, smoothly curve the fingers and thumb (and lower the knuckles). Move the hand slightly with the fingers (i.e., up, producing less of a curve at the wrist).

Figs. 13a and 13c show the fingers just before the down-bow; 13b and 13d show them just before the up-bow. In reality these finger and hand movements can be so slight as to be invisible, since the tiniest give is enough to make the bow changes smooth.²

¹ There is a difference between a give of the fingers and an active finger movement. In reality, finger movements at the bow change should be kept to a minimum, since a 'flick' of the fingers at the change causes the bow speed to increase. Smooth bow changes come more easily from (1) slowing the bow speed, and (2) lightening the bow, just before changing direction. An active finger movement at the heel is often associated with the Carl Flesch school of playing. But Flesch himself said that he introduced the finger action into his teaching method only as a helpful exercise, and had never intended it to become a crucial point of bow technique.

² The finger stroke must only be used in minimal doses because if the change of bow is seen, it will also be heard! Carl Flesch: *Problems of Tone Production in Violin Playing* (Baden-Baden, 1931), 14.

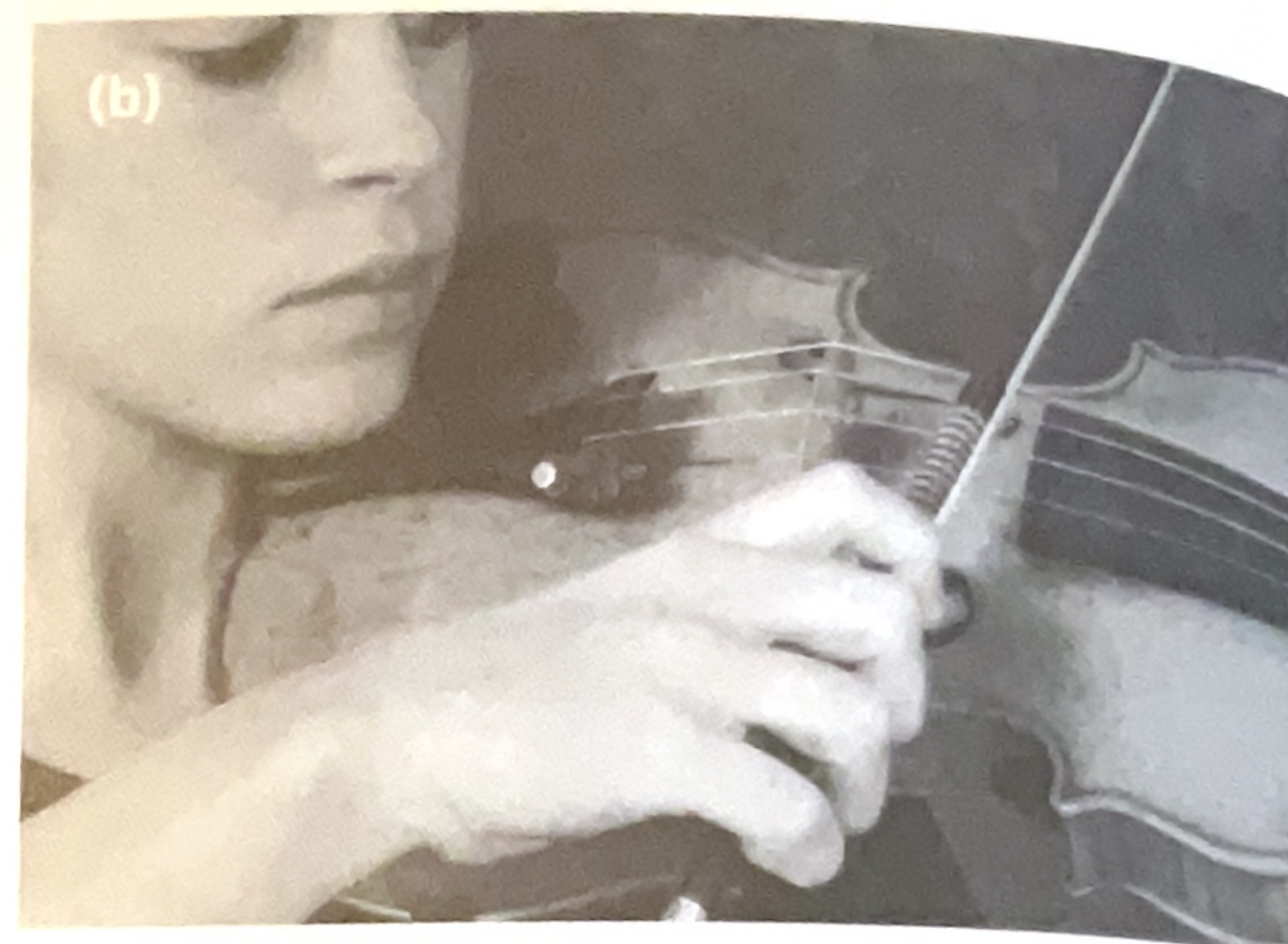
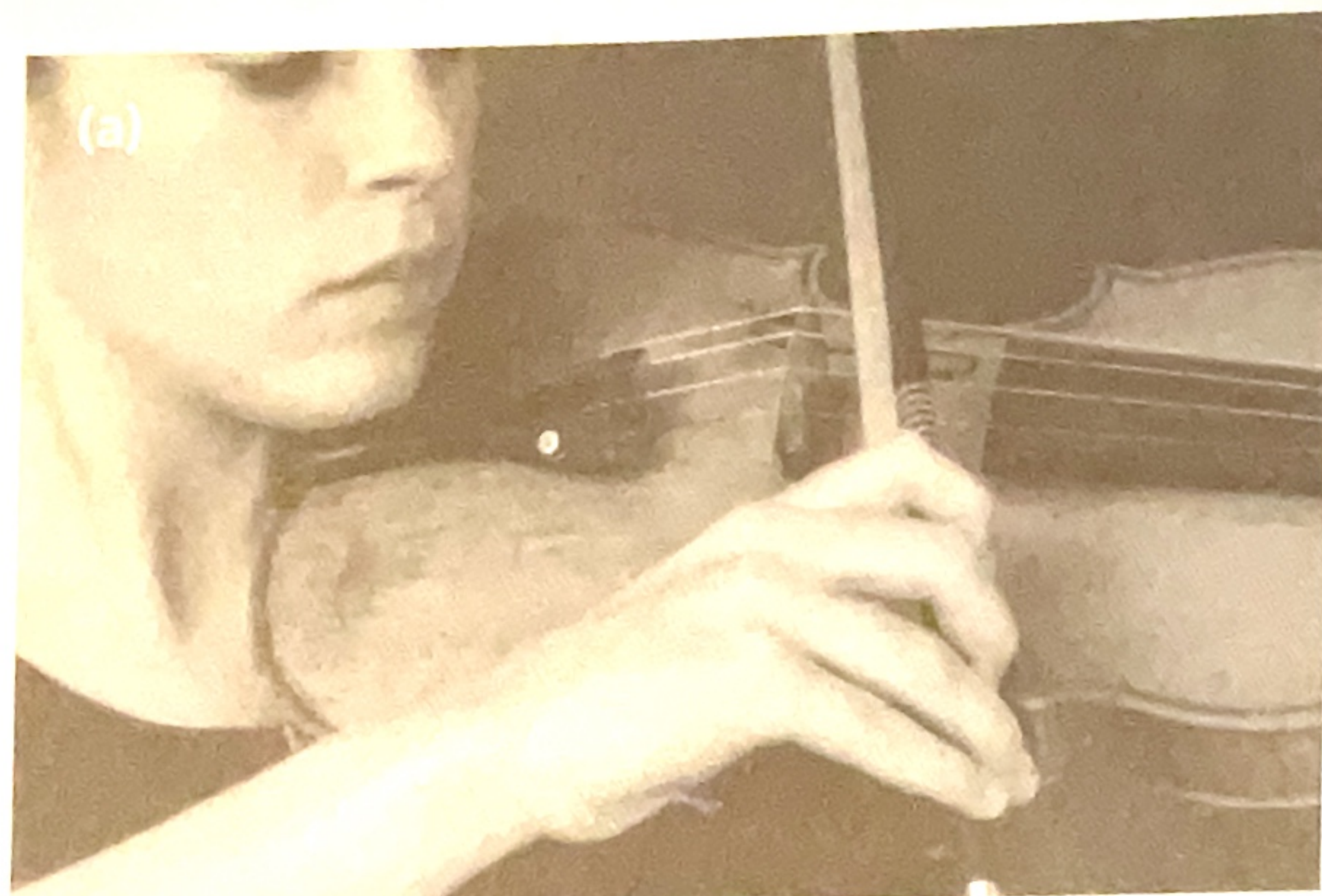
Fig. 14

² Dounis recommended a larger, more visible movement, and called it the 'brush stroke...based on a mental image of the right hand acting like a paint brush, the fingers being the hairs of the paint brush, and the hand the handle.' (Chris A. Costantakos: *Demetrios Constantine Dounis: His Method in Teaching the Violin* (New York, 1988), 76.

Bow angle

The fingers help to keep the bow parallel with the bridge. A common error is to try to correct crooked bow strokes by changing what the arm is doing, when the fault really lies with the fingers. This can result in awkward arm movements and tension.

Fig. 15



Using the fingers to alter the angle of the bow

- Hold the bow above the string at the heel. Move the point towards the bridge (Fig. 15a), and away from the bridge (Fig. 15b), using only the fingers.
- To move the point in towards the bridge, pull the first finger in and extend the fourth finger. To move the point out again, pull the little finger in and extend the first finger.
- Keep the heel of the bow above the string.
- Keep the arm and hand still. Place a coin on the back of the hand and make the movements without the coin falling off.

Hand movements *OK*

Moving the hand from the wrist, during string crossings, reduces the movement needed by the upper arm and forearm. A little hand movement replaces a lot of arm movement.

Exercise 1 – Basic movements

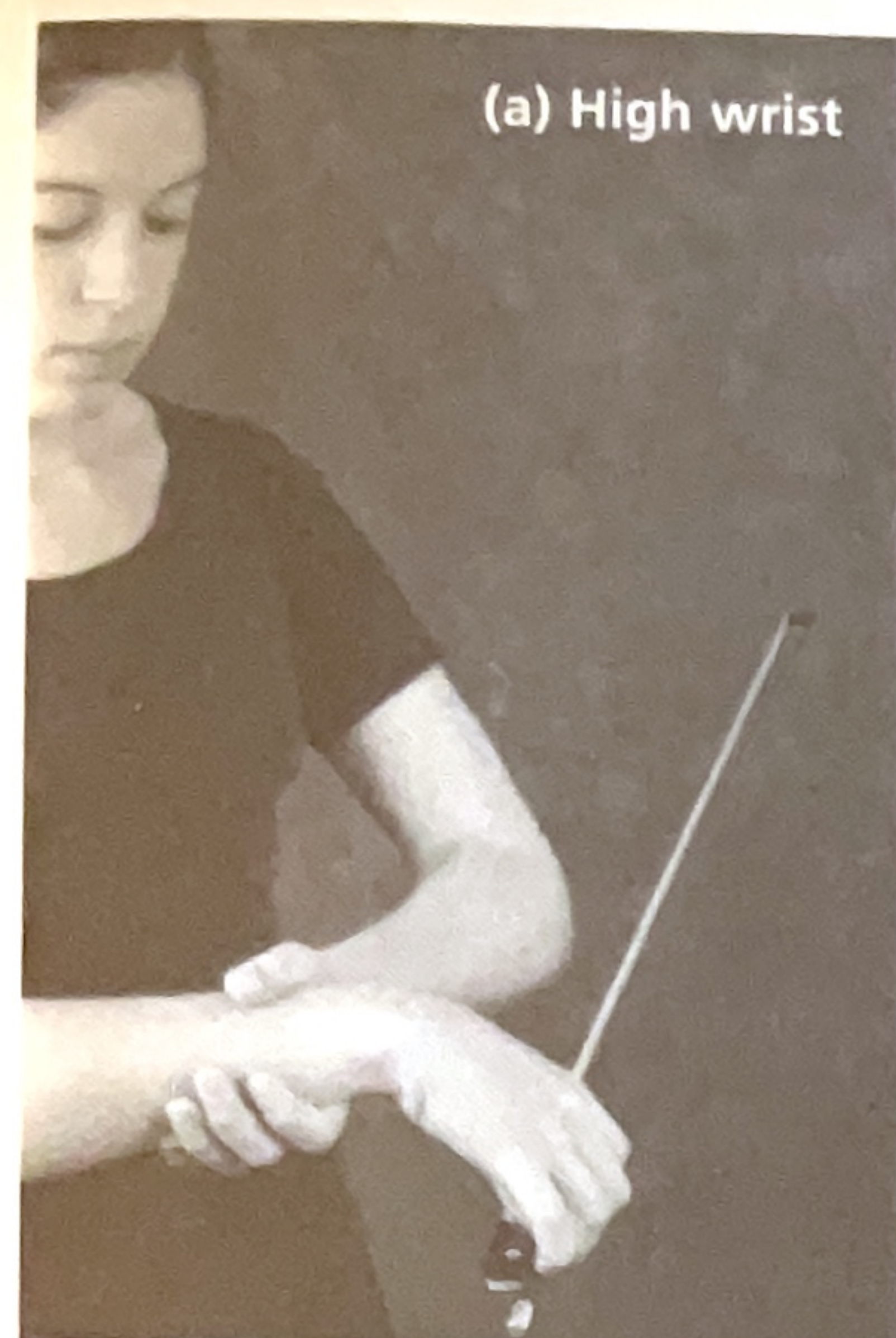
Hold the forearm near the wrist with the left hand.

- 1 Start with the forearm and hand in a straight line. Then lower the hand from the wrist, below the level of the forearm. This creates a 'high' wrist (Fig. 16a). Return to the straight line again, and repeat several times in a continuous motion.

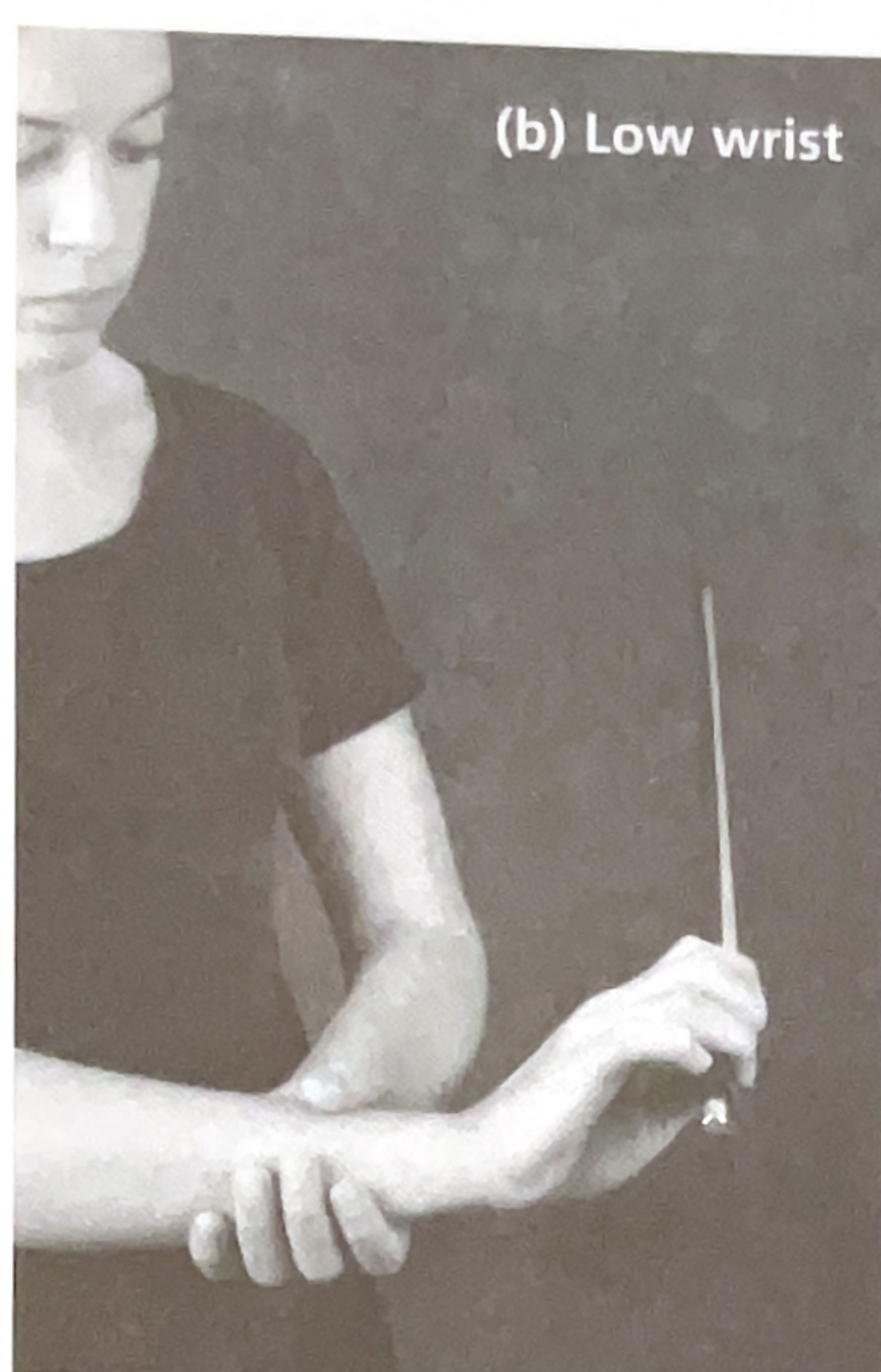
Raise the hand above the level of the forearm. This creates a 'low' wrist (Fig. 16b). Return to the straight line again, and repeat several times.

Keep the forearm parallel with the floor and move only the hand.

- 2 Move the hand from side to side, keeping the forearm and hand parallel to the floor. Swing the point of the bow towards the shoulder by moving the hand to the left (Fig. 16c), and away again by moving it to the right (Fig. 16d). (Naturally, this movement is never used in actual playing.)
- 3 Put the vertical and horizontal movements together to make circles. Curve the fingers and thumb as the hand moves up, straighten as the hand moves down. Move the hand only, keeping the forearm parallel with the floor, and the bow at right angles to the forearm.



(a) High wrist



(b) Low wrist



(c) Hand moved to the left



(d) Hand moved to the right

Fig. 16

Exercise 2

In this exercise, use as little arm movement as possible to cross from one string to another, to exaggerate the hand movement. Mainly use the hand, moving from the wrist, and forearm rotation (see page 15).

- Play only in the upper half.
- In each bar, position the elbow in a middle position so that the hand can reach both outer strings comfortably.
- Use a higher wrist to play a higher string (Fig. 16a), and a lower wrist to play a lower string (Fig. 16b).

Also play Exercise 49 in the upper half, using only the hand to change strings.

$\text{♩} = 60$