# Boundary awareness

opposed to visual viewport)

There are <u>actually 3 edges</u> that anchored elements might want to be aware of:

1. The scroll parent 2. The viewport (visual vs layout -- pinch zoom on popups? If want support, probably want it on layout as

3. The document Which boundary the author cares about will depend

on interactions such as how the popup is dismissed.

Priority on direction vs. dimension Whether on author cares more to preserve the popup's direction or dimension depends on the popup content and decoration. Some decorations that assume

directionality may cause visual bugs when the popup

Potential ways to handle: \* Author expresses a preference for: re-position me vs. resize me

is re-positioned by user agent algorithms.

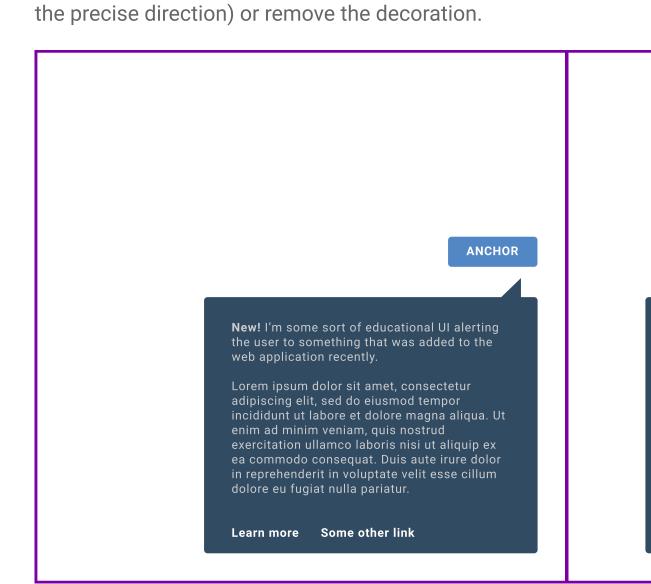
\* Author can mark whether or not it is 1) safe to re-position and/or 2) safe to resize (not mutually exclusive). Could be expressed as a whole ("ok to

reposition") or in only one axis ("ok to reposition vertically") \* Author can express a fallback position

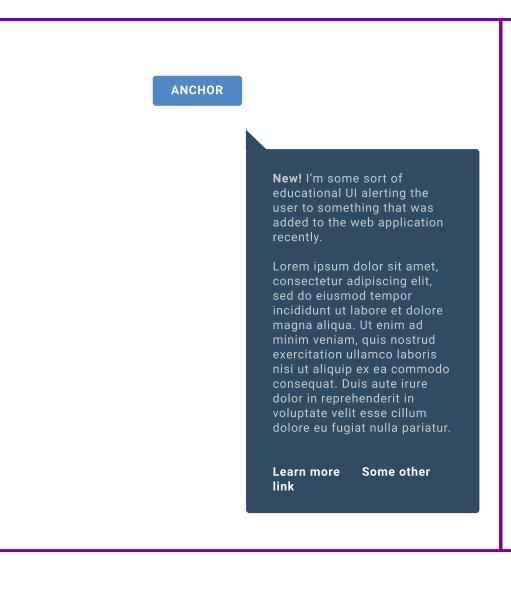
Boundary awareness with directional decoration Example: popup positioned to the bottom-right of the anchor, self-aligned to its own top-left edge, and the popup has a directionally-aware decoration.

Enough boundary space for height and width ANCHOR u fugiat nulla pariatur. Learn more Some other link

#### Not enough horizontal space: Ideal UA repositioned the anchored element. Author is aware of the repositioning, and can either adjust (if we expose

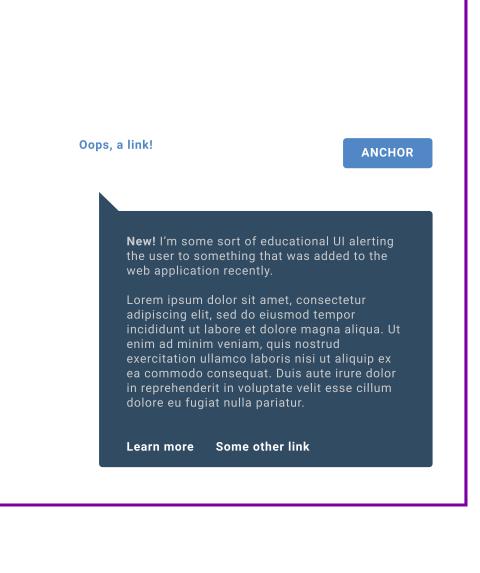


Not enough horizontal space: OK-to-bad UA shrank the width to fit. It's ok, might look a little weird depending on how content wraps. Introduction of a scroller might look buggy depending on content.



Not enough horizontal space: bad UA repositioned the popup. Due to the popup decoration, it looks like the popup is referring to another

link on the page, not the anchor. UX problem.



Not enough vertical space For this example, vertical space is the same.

\* Ideal if the popup is repositioned, and the author can respond to repositioning. \* OK-to-bad if the height is reduced (probably worse than horizontal, since this use case avoids scrollbars) \* Bad if the popup is repositioned and the arrow is pointing at something random

Code: position: anchor(#button); Boundary awareness with simple cardinal

Example: a simple dropdown menu

Enough boundary space for height and width

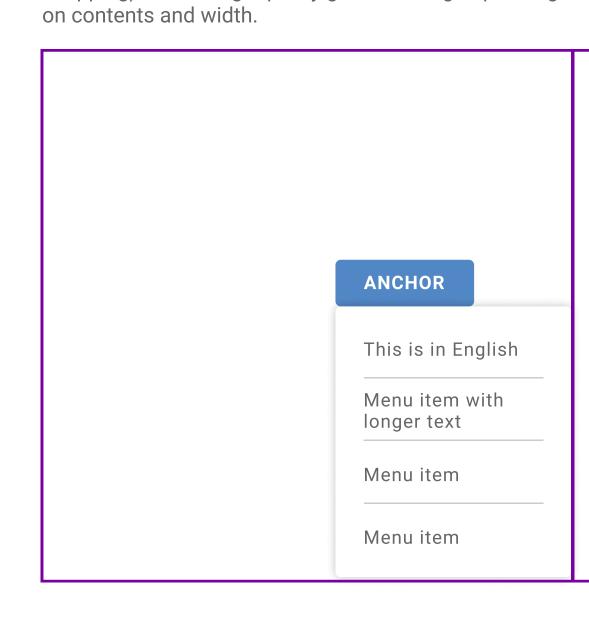
ANCHOR	
This is in En	glish
Menu item v	vith longer text
Menu item	
Monuitor	
Menu item	

Not enough horizontal space: Ideal UA flipped both the anchor point and the popup's self

alignment.

	ANCHOR
This is in Engli	sh
Menu item with	h longer text
Menu item	

Not enough horizontal space: OK-to-bad UA shrank the width to fit. OK within reason (text wrapping), starts to get pretty gross looking depending



ANCHOR	
This is abso- lutely blech	
Menu item with longer text	
Menu item	
Menu item	

Not enough horizontal space: Bad UA repositioned the popup just enough to fit. It looks

pretty buggy.

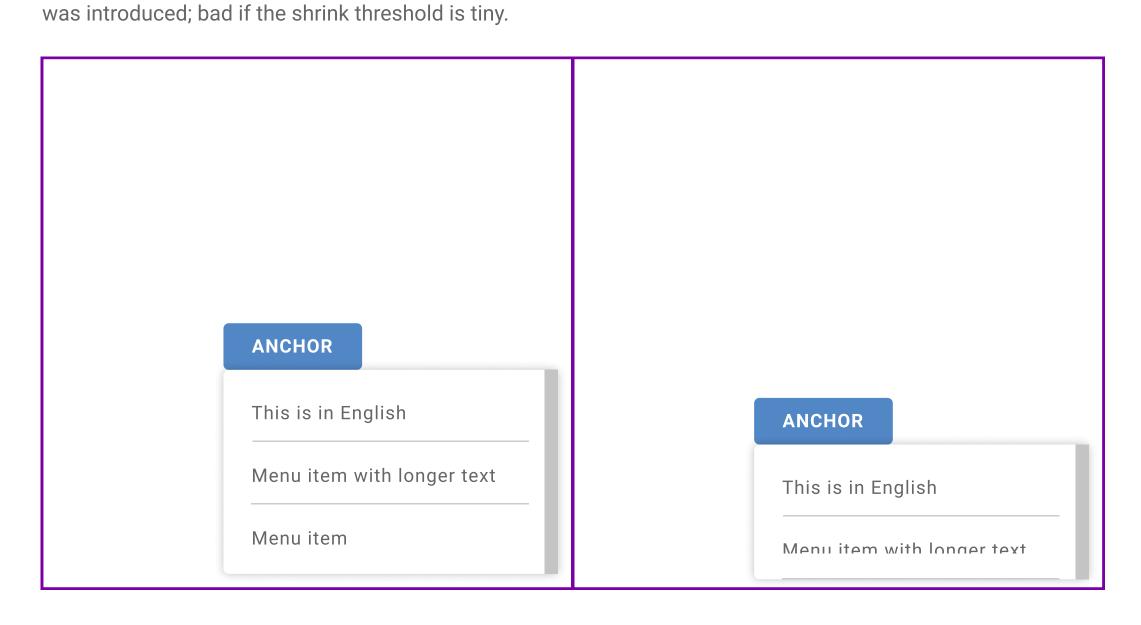
alignment.

	ANC	IOR	
Th	is is in I	English	1
Me	enu item	n with I	ongert
Me	enu item	١	
Me	enu item	1	

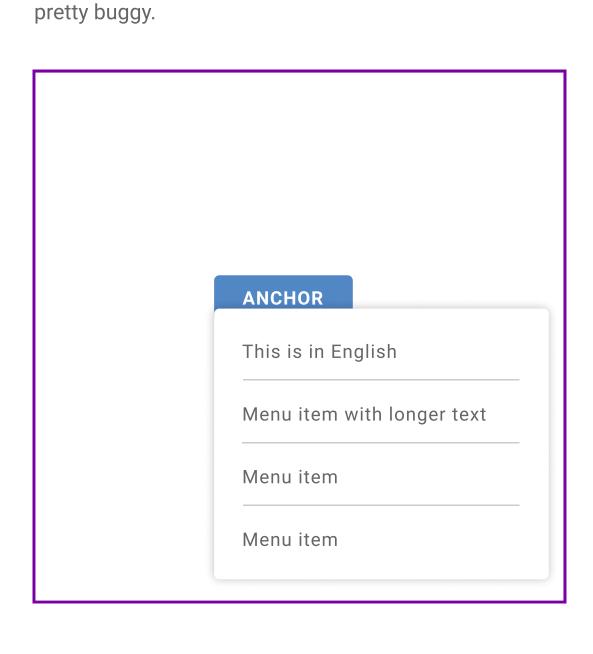
Not enough vertical space: Ideal UA flipped both the anchor point and the popup's self



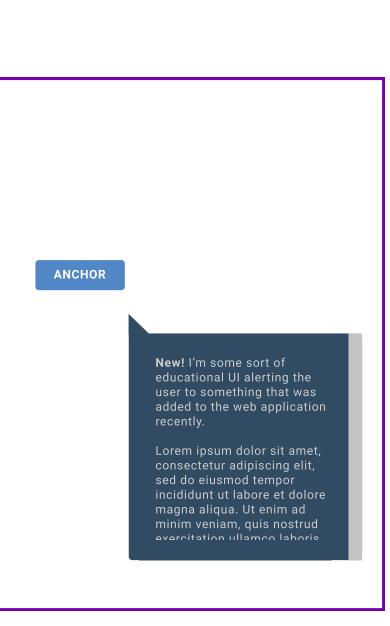
Not enough vertical space: OK-to-bad UA shrank the height to fit. Good if the shrinking isn't too severe and the item had a scroller; OK if a new scroller



Not enough vertical space: Bad UA repositioned the popup just enough to fit. It looks



ANCHOR Learn more Some other link



## Boundary awareness with MacOS-style select

Test case for Firefox and Safari on MacOS

Enough boundary space for height and width

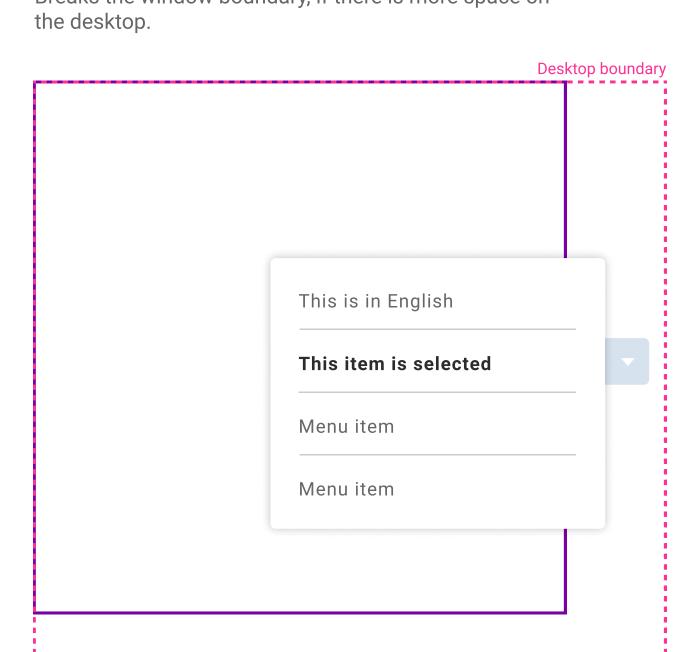
This is in English	
This item is selected	
Menu item	
Menu item	

Not enough horizontal space: Gecko Gecko will reposition the popup to the edge of the

viewport.

This is in English	
This item is selected	
Menu item	
Menu item	

#### Not enough horizontal space: Webkit Breaks the window boundary, if there is more space on



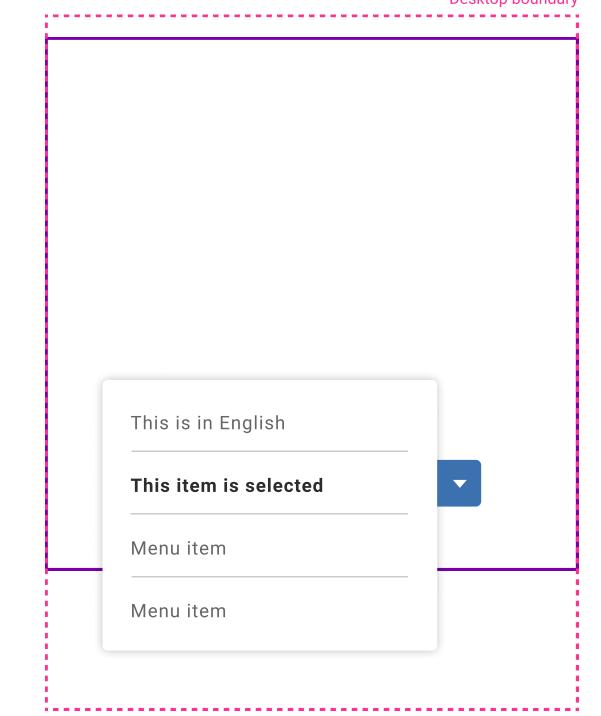
#### If there is no more space on the desktop, repositions the popup to the edge of the viewport.

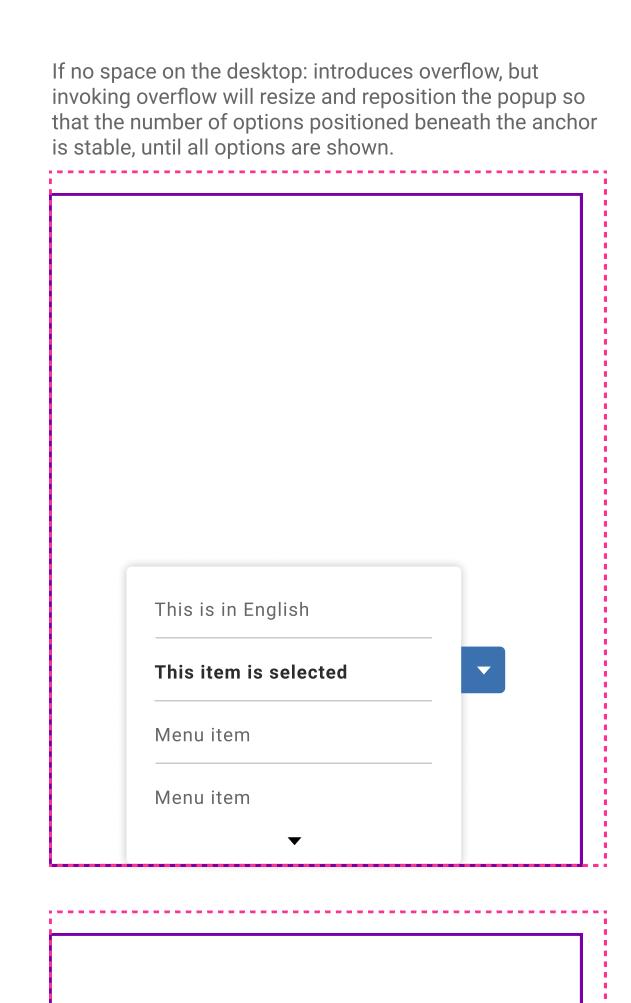
This is in English	
This item is selected	
Menu item	
Menu item	

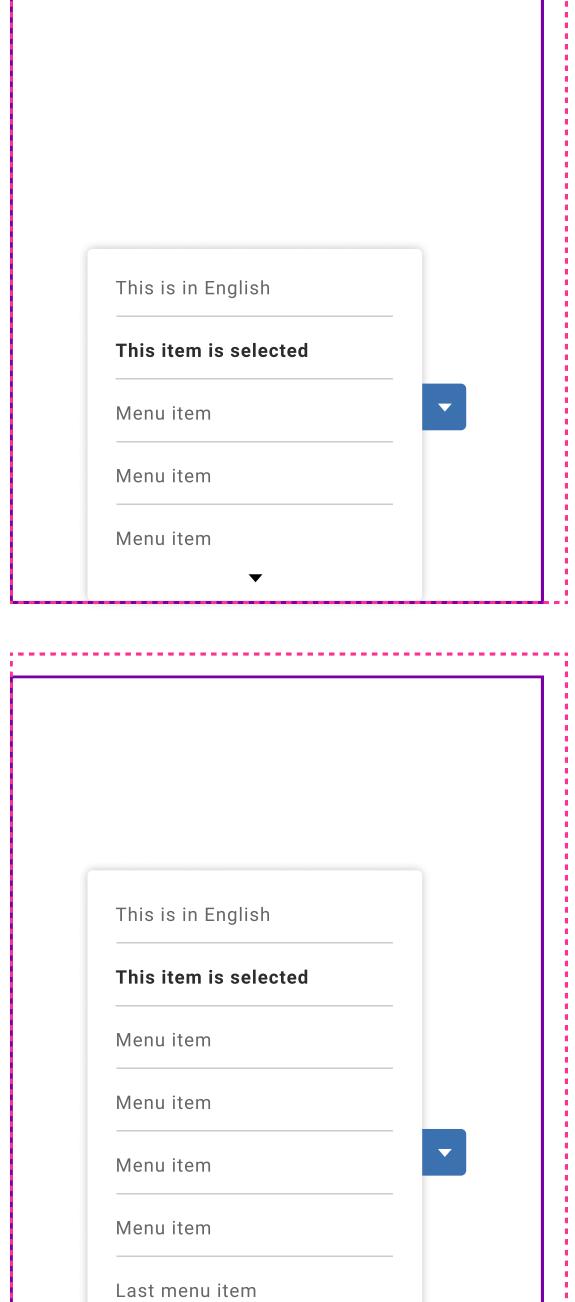
# Not enough vertical space: Gecko If there is enough space in a given vertical direction, If both directs lack space, Gecko will position in the Gecko will reposition the popup in that direction, and direction with more space and introduce overflow. The options no longer overlap on top of the anchor. popup is scrolled to the selected option by default. This item is selected \_\_\_\_\_ Menu item \_\_\_\_\_ Menu item \_\_\_\_\_ Menu item This item is selected

### Not enough vertical space: Webkit Breaks the window boundary, if there is more space

on the desktop. Desktop boundary





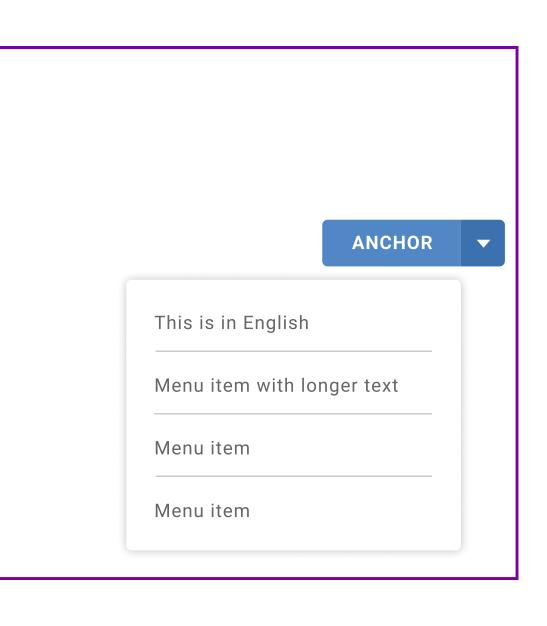


Boundary awareness with offsets Example: a simple dropdown menu

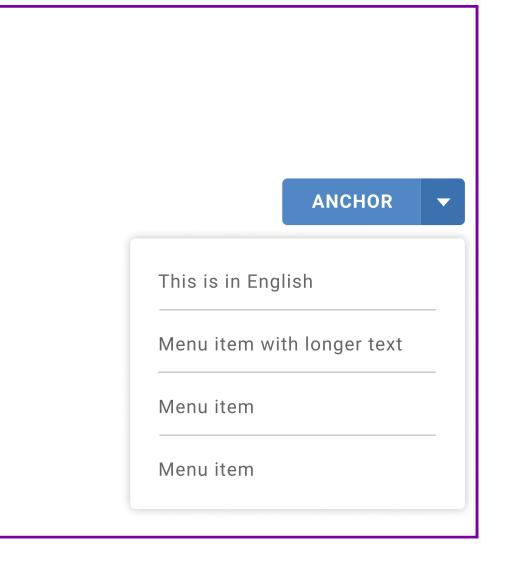
# Enough boundary space for height and width

ANCHOR	
	This is in English
	Menu item with longer text
	Menu item
	Menu item





#### Not enough horizontal space: OK When repositioning, UA discarded the offset.



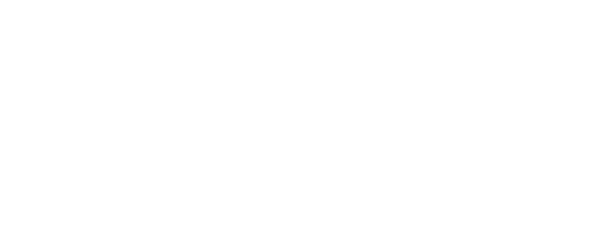
#### Not enough horizontal space: Bad When repositioning, UA kept the offset as-is.

	ANCHOR	
This is in English		
Menu item with longer	text	
Menu item		
Menu item		

This item is selected

ction with more space and intro up is scrolled to the selected op	duce overflow. The tion by default		
		1	
This item is selected			
Menu Item			
This item is selected			
Menu item			

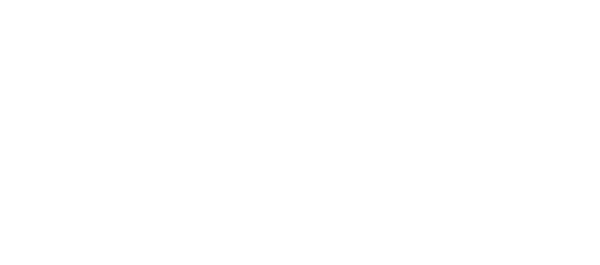














# Boundary awareness with chained anchors

Example: cascading menus

Enough boundary space for height and width

This is in English			
Menu item with longer	text		
Menu item	>	This is in English	
Menu item		Menu item with longer text	

Not enough horizontal space: OK UA flipped both the anchor point and the element's

self-alignment. The arrow makes this look a bit weird.

	ANCHOR	
	This is in English Menu item with longer text	_
This is in English	Menu item	>
Menu item with longer text	Menu item	
Menu item Menu item		

Not enough horizontal space: OK-to-Bad Last anchored object is resized. Same thoughts apply as in simple cardinal example.

ANCHOR	
This is in English Menu item with longer text Menu item > Menu item	This is in English Menu item with longer text Menu item
	Menu item