The Call-C-Function MISCN opcode

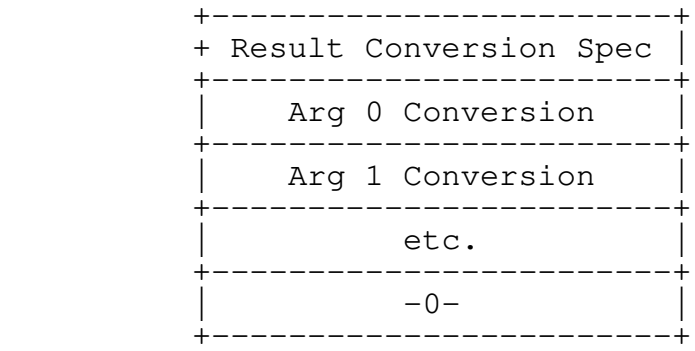
This opcode calls the specified C function, performaing conversion of arguments and result as needed, and returning an indication of any errors it encounters.

`(MISCN CALL-C` *Function Conversion-spec Return-Code* `&REST` *Args-To-C-Fn*`)`

Function is a Lisp integer (FIXP or SMALLP) containing the address of the function to be called. CALL-C checks for some special values, 0 (meaning the function was never loaded) and -1 (meaning the function was loaded once, and subsequently unloaded at user request), and -2 (meaning that the function has been loaded, but there are unresolved externals).

Conversion-spec specifies how the arguments and function-result are to be converted.

This is a Lisp pointer to a block of 16-bit entries:



Possible values for the conversion fields:

```
0    VOID (return only, return NIL)
1    int (Lisp SMALLP/FIXP <=> 32-bit integer)
2    char (Lisp SMALLP/CHARACTER <=> char)
3    float
4    long
5    short
6    lisp
7    cpointer
```

Return-Code is a FIXP cell into which CALL-C places a return value. Possible values are:

```
0    Successful call and return
+n   conversion error on argument n
-1   conversion error on result
-2   signal encountered while running C??
```

DEFFOREIGN—Define a foreign funcion for lisp.

This macro tells Medley about a foreign function—its arguments, what type of result it returns, etc. It also creates a Medley function you can call to invoke the foreign function.

(DEFFOREIGN *Function Result-Type ArgList* &KEY *:function-name*)

Function is a symbol, the Lisp name for the function. *Function* is given a definition that results in the foreign function being called. *Function* returns what the foreign function returns, after conversion to a Lisp datatype.

Result-Type is a symbol specifying what type of data the foreign function returns, and how it is to be converted to a Lisp type. Possible values are:

:void	The function returns no interesting value. Function will always return NIL.
:long	
:short	
:int	The function returns an integer. It is converted to a FIXP or a SMALLP.
:char	The function returns a character. It is converted to a SMALLP.
:float	The function returns a floating-point number. It is converted to a Lisp FLOATP.
:lisp	The function returns a lisp-pointer, which isn't converted, but DOES get reference counted.
:byte	?? same as character, but converted to what??
:cpointer	The function returns a pointer to a block of storage not in the Lisp virtual memory image. This may be a pointer to a C structure, or whatever. It is intended for use with CBLOCKRECORD and DEFCSTRUCT
<c type>	Where <C type> is a type defined using DEFCSTRUCT. The result is a pointer to a block of storage no in the Lisp virtual memory image....

ArgList is a list of symbols, each specifying what kind of data the foreign function expects for a given argument. The possible values are as above.

Function-name is a symbol or string containing the true name (as far as the foreign language is concerned) of the function you want to call when the Lisp *Function* is called.